
به نام خداوند جان و خرد
کزین برتر اندیشه برنگذرد

How to Build/Buy & Apply AI Projects?

Based on IDC&Microsoft Report 2024

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AI Definitions

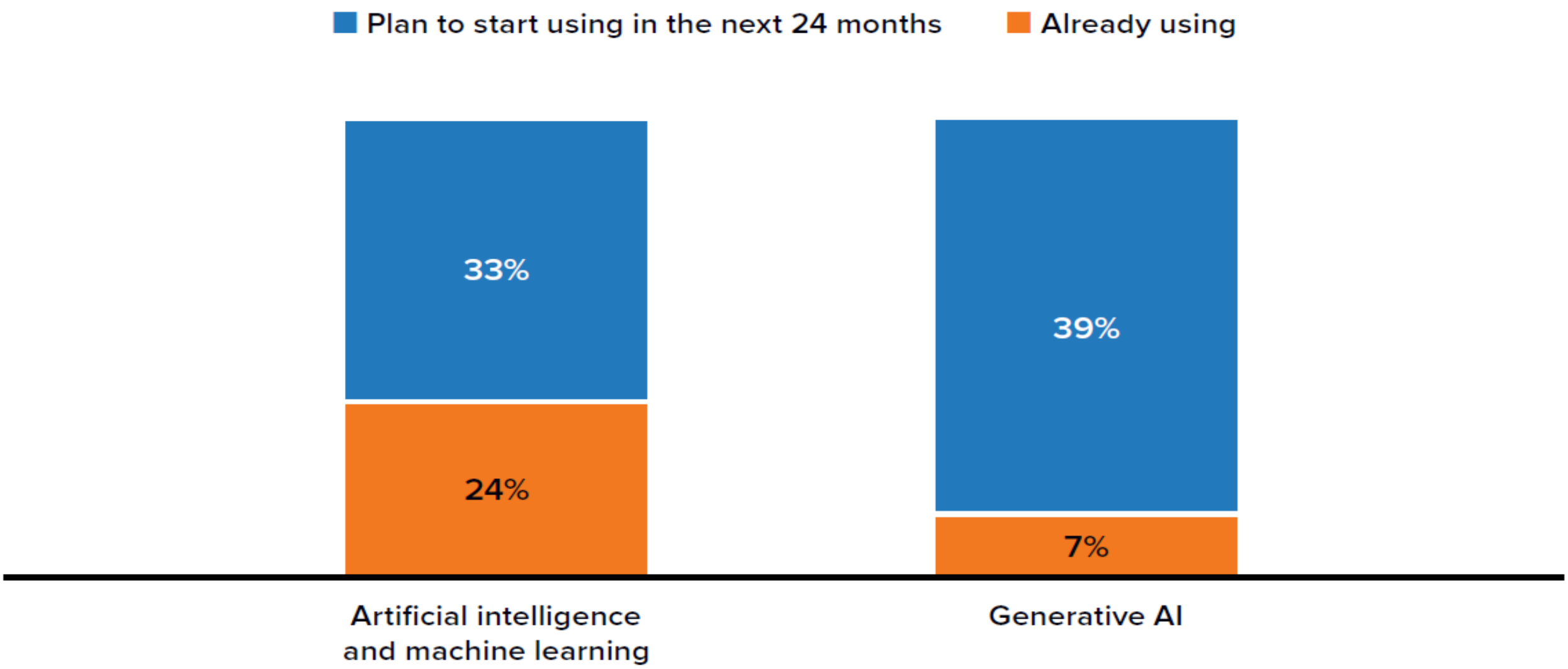
Traditional AI models are trained on pre-existing data sets to recognize patterns and make predictions. These models fall into two main categories:

- **Interpretative AI:** Analysis of images and data streams so that human and digital workers can detect, analyze, and act (e.g., machine vision). At runtime, real-time data flowing into the system is compared with training data to predict specific events.
- **Predictive AI:** Analysis of large training data sets to identify long-term patterns in behavior and detect changes (e.g., digital twins and fraud/threat detection)

Generative AI creates new content using existing content (e.g., text, audio, video, images, and code) in response to short prompts. Generative AI is based on large language models, including transformer models (neural networks that learn context and meaning in sequential data by tracking relationships between words) and foundation models (a class of machine learning models trained on diverse data; they can be adapted or fine-tuned for a wide range of downstream tasks).

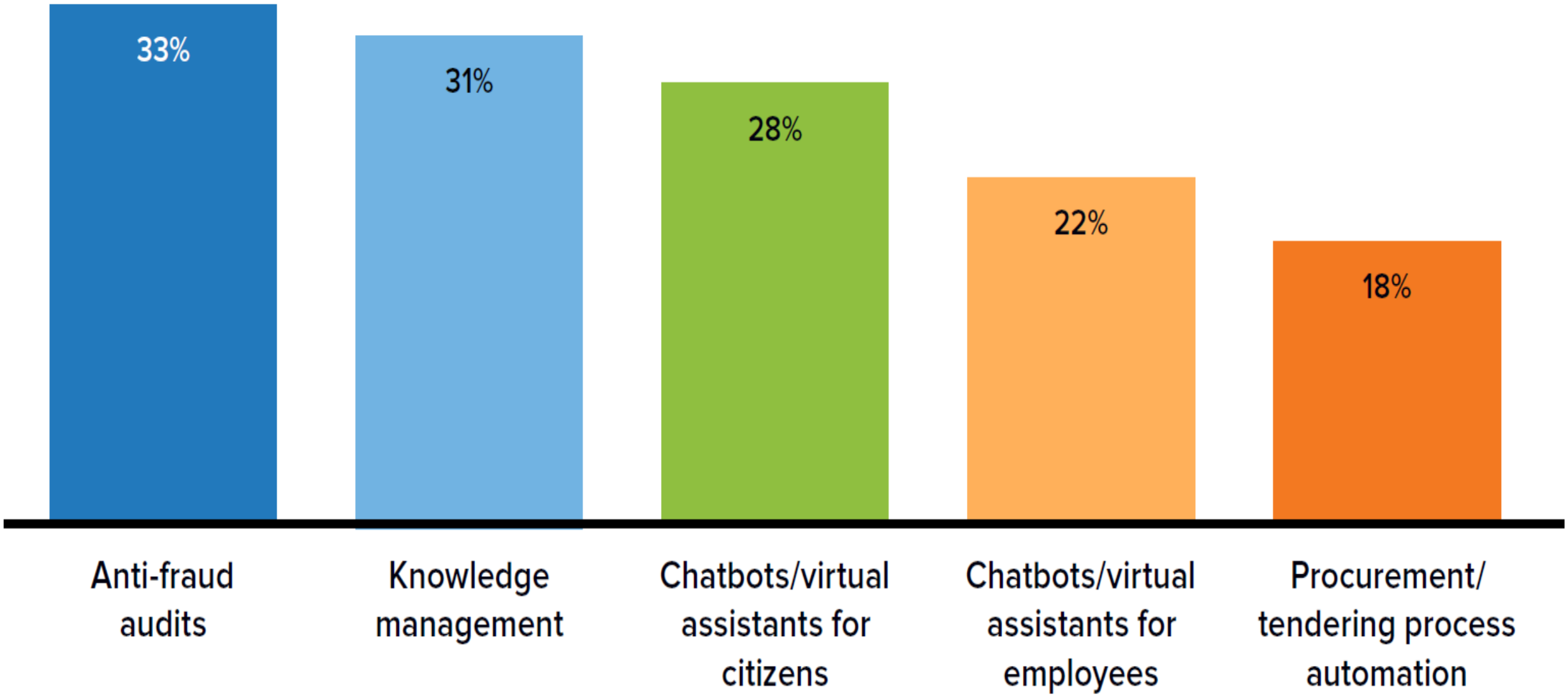
Source: IDC, 2024

EMEA Government Investment in AI/ML and GenAI



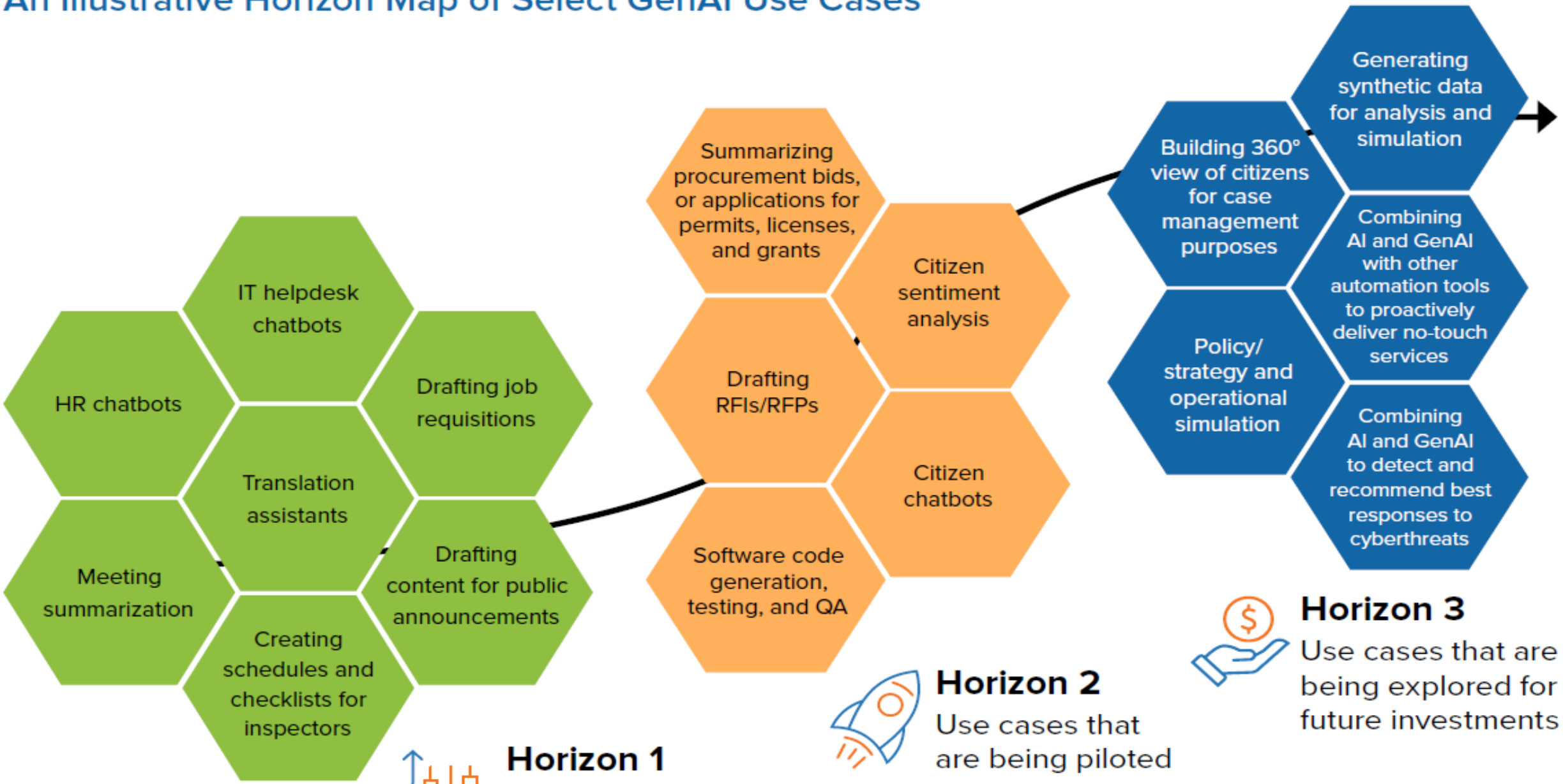
Source: IDC's *Cross-Industry Acceleration Survey,* December 2023, AI/ML (n = 87, government respondents)

Top 5 AI Use Cases Among European Governments

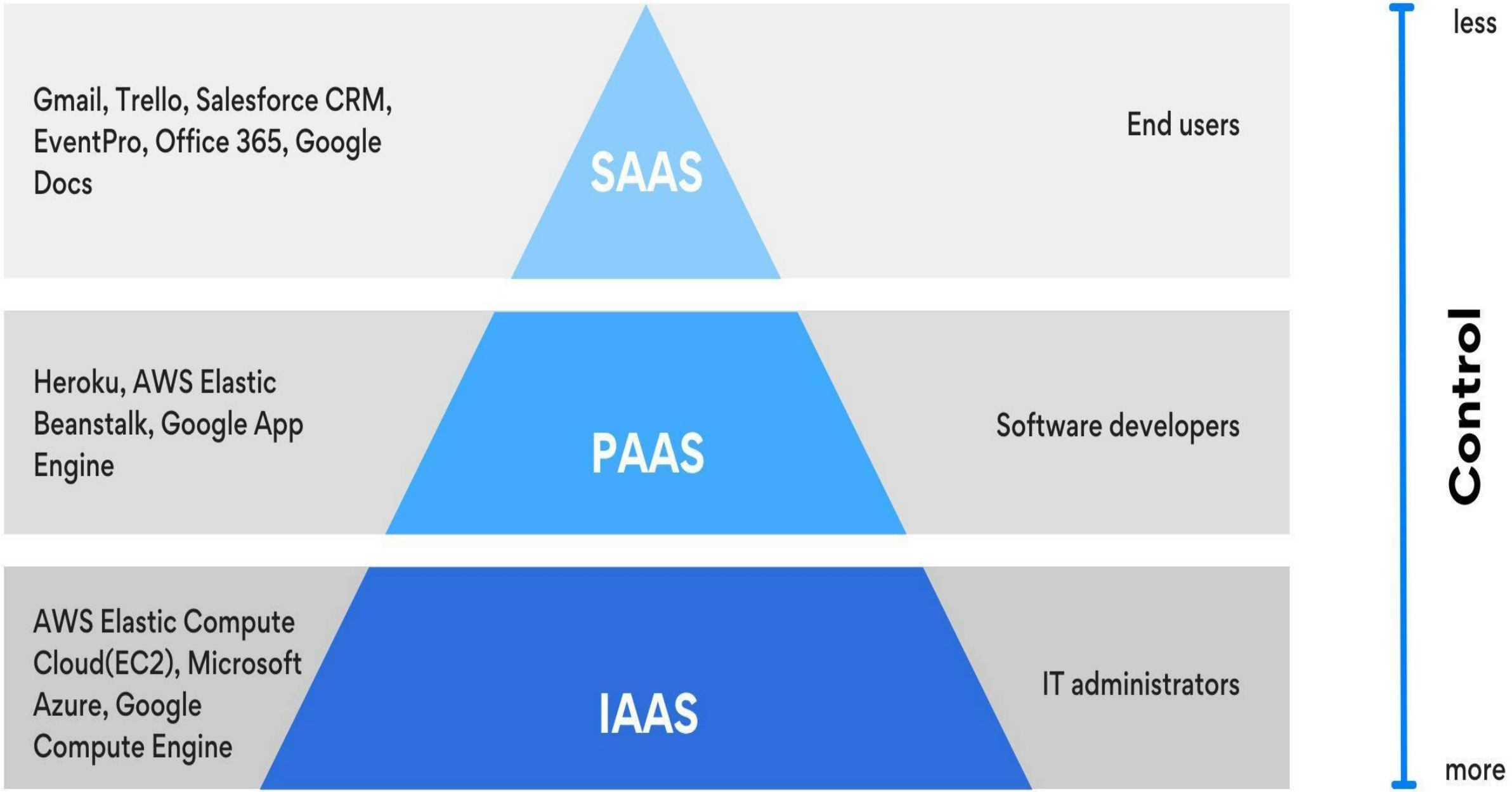


Source: IDC's *European Public Sector AI Procurement Survey,* conducted for Microsoft, March 2024 (N = 330)

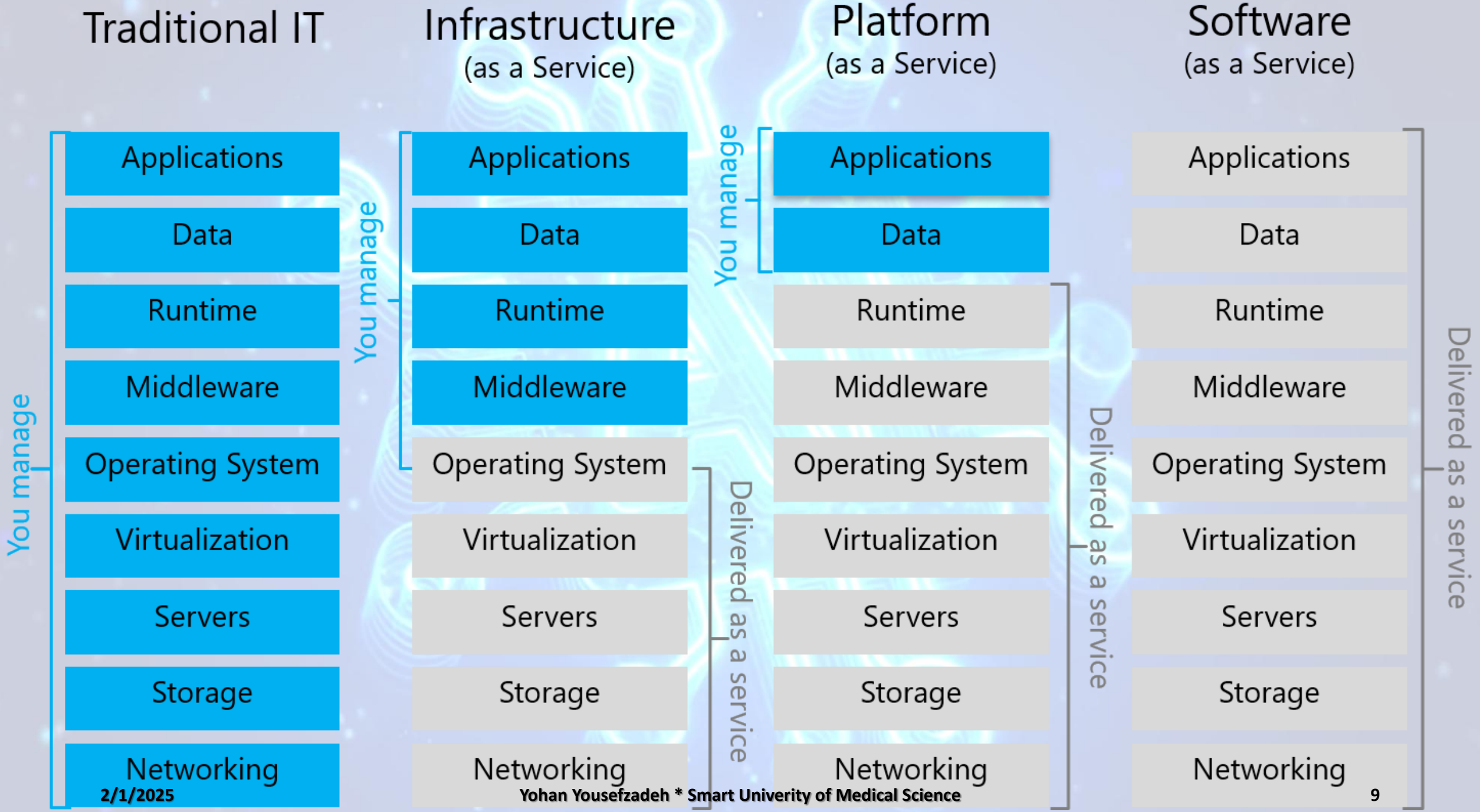
An Illustrative Horizon Map of Select GenAI Use Cases



Source: IDC, 2024


Gmail, Trello, Salesforce CRM, EventPro, Office 365, Google Docs
SAAS
End users
Heroku, AWS Elastic Beanstalk, Google App Engine
PAAS
Software developers
AWS Elastic Compute Cloud(EC2), Microsoft Azure, Google Compute Engine
IAAS
IT administrators
less
Control
more


SaaS یه ظرف غذای آماده‌س. فقط باید از یخچال دربیاری و گرمش کنی
PaaS یه ظرف آماده از مواد اولیه‌س. باید طبق دستور آشپزی باهم ترکیب‌شون کنی
IaaS همین آشپزخونه‌س که باید مواد لازم غذا رو اول آماده کنی، بعد ترکیب کنی تا غذا درست بشه
IaaS
SaaS
IaaS
PaaS
SaaS
PaaS
SaaS
IaaS
SaaS
SaaS
IaaS
PaaS


Traditional IT
Infrastructure
(as a Service)
Platform
(as a Service)
Software
(as a Service)
Applications
Data
Runtime
Middleware
Operating System
Virtualization
Servers
Storage
Networking
You manage
Delivered as a service

Factors Impacting Build or Buy Decisions for AI Capabilities

COST

(Upfront & Sustained)

COMPLIANCE

(Data, Code, Infrastructure)

TIME TO VALUE

(Initial & Ongoing)

ACCESS TO CAPACITY AND COMPETENCIES

(Internal & External)

Source: IDC, *The Build/Buy Decision Tree for GenAI*, 2024

- **Cost:** The total cost of ownership for the full life cycle of AI training and inferencing, both at the pilot stage and when scaling it to full production

- **Compliance:** Aspects such as compliance with data protection and AI regulations and policies

- **Time to value:** The ability to realize the benefits of AI solutions, in alignment with the government's mission and strategic goals, in the planned timeframe

- **Access to capacity and competencies:** The ability to allocate adequate resources, including not only technical resources (e.g., IT infrastructure and compute, applications, and models) and skills but also the legal, governance, and business skills required to realize the benefits of AI

Pre-Feasibility Study (PFS): “Go or No-Go” Decision

- **Objective:** Assess whether the AI/GenAI project is worth pursuing in detail.
- **Key Focus Areas:**
  - **Strategic Fit:** Does the project align with your hospital's priorities?
  - **Data Suitability:** Can the HIS databank support AI model training?
  - **Legal & Ethical Barriers:** Are there strict regulations that could block the project?
  - **Basic Cost Estimates:** Can the hospital afford the project’s infrastructure and maintenance?
  - **Technical Readiness:** Does the IT team have the required expertise?
- **Outcome:** If the PFS results are positive, move to the detailed **Feasibility Study (FS)**. If not, either **revise the approach** or **stop the project**.

Feasibility Study (FS): "How to Implement the Project"

- **Objective:** Conduct a **detailed technical, financial, legal, and operational analysis** to prepare for implementation.
- **Key Focus Areas:**
  - **Technical Feasibility:**
    - Compatibility of AI models with HIS, data infrastructure, and security.
    - Need for additional software, hardware, or cloud-based solutions.
    - Scalability and performance testing of AI models.
  - **Financial Feasibility:**
    - Estimated data storage, processing, AI development, and ongoing maintenance budget.
    - Cost-benefit analysis: Will the project improve efficiency, reduce costs, or enhance patient outcomes?
    - Potential funding sources (grants, partnerships, investors).

Feasibility Study (FS): "How to Implement the Project“-Continued

- **Key Focus Areas:**
  - **Legal & Compliance Feasibility:**
    - Ensuring adherence to **HIPAA, GDPR, and local laws**.
    - Need for **data-sharing agreements (DUA), IRB approvals, and patient consent policies**.
    - Risk assessment on **liability issues** (e.g., incorrect AI-generated diagnoses).
  - **Operational Feasibility:**
    - Staff training requirements (clinicians, IT, data scientists).
    - Workflow integration: How will AI models impact daily hospital operations?
    - Backup plans in case of AI model failure or inaccuracies.
- **Outcome:**
  - If the FS is **successful**, proceed with **Project Execution & Monitoring**
  - If **major challenges arise**, modify the research plan or seek alternative approaches.

Feasibility Study (FS): Cost Estimation & Budget Planning

Cost Category	Estimated Cost ($)	Notes
Infrastructure Setup	[Cost]	Cloud/on-premise setup
AI Model Development	[Cost]	Computational resources, developer salaries
Data Processing & Security	[Cost]	Data anonymization, encryption
Software Licensing	[Cost]	Third-party AI tools, HIS APIs
Legal & Compliance	[Cost]	Ethics Committee submission, legal review, HIPAA/GDPR compliance
Training & Education	[Cost]	AI training for hospital staff
Pilot Testing & Validation	[Cost]	Testing on a small dataset
Maintenance & Model Updates	[Cost]	Retraining, software updates
Total Estimated Cost	**[Total Cost]**	

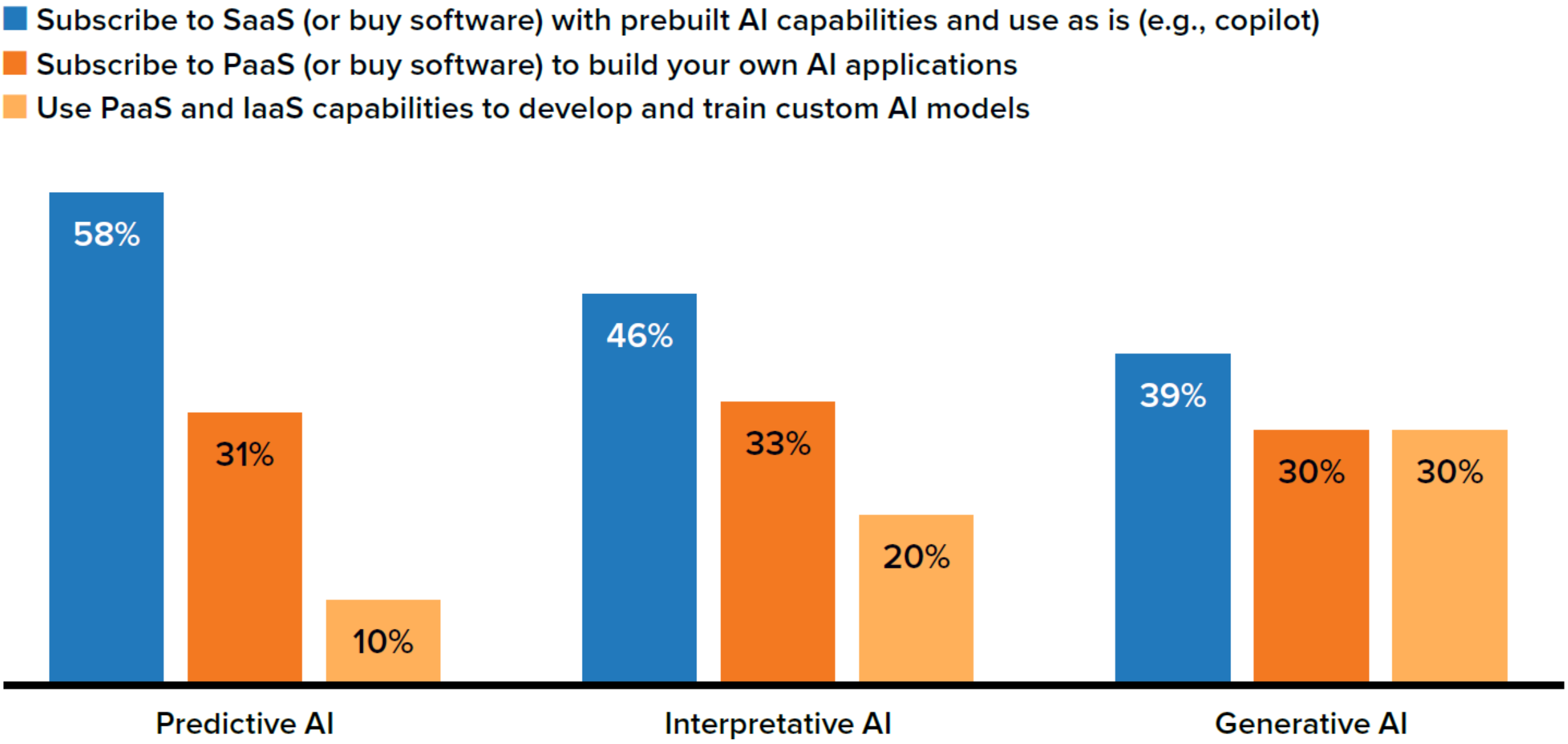
Feasibility Study (FS): Cost-Benefit Analysis (ROI Assessment)

Factor	Current Situation (Without AI)	With AI/GenAI Implementation	Projected Benefit
Time spent on patient diagnosis	[X hours]	[Y hours]	Time reduction of X%
Cost of manual data processing	[$X]	[$Y]	Savings of $Z per year
Diagnostic accuracy rate	[X%]	[Y%]	Expected improvement of Z%
Number of patient cases handled per hour	[X]	[Y]	Increased efficiency
AI-enabled early disease detection	No	Yes	Reduction in adverse events

Feasibility Study (FS): Legal Agreements & IP Rights

Legal Document	Purpose	Responsible Party
Data Use Agreement (DUA)	Defines access, sharing, and security policies for patient data	Hospital & Research Team
Research Collaboration Agreement (RCA)	Clarifies roles, responsibilities, and IP ownership	Hospital, Academic Center
Non-Disclosure Agreement (NDA)	Protects confidential patient and AI model data	Hospital, Tech Partners
Intellectual Property (IP) Licensing	Defines ownership of AI-generated solutions	Hospital, Research Team, External Partners

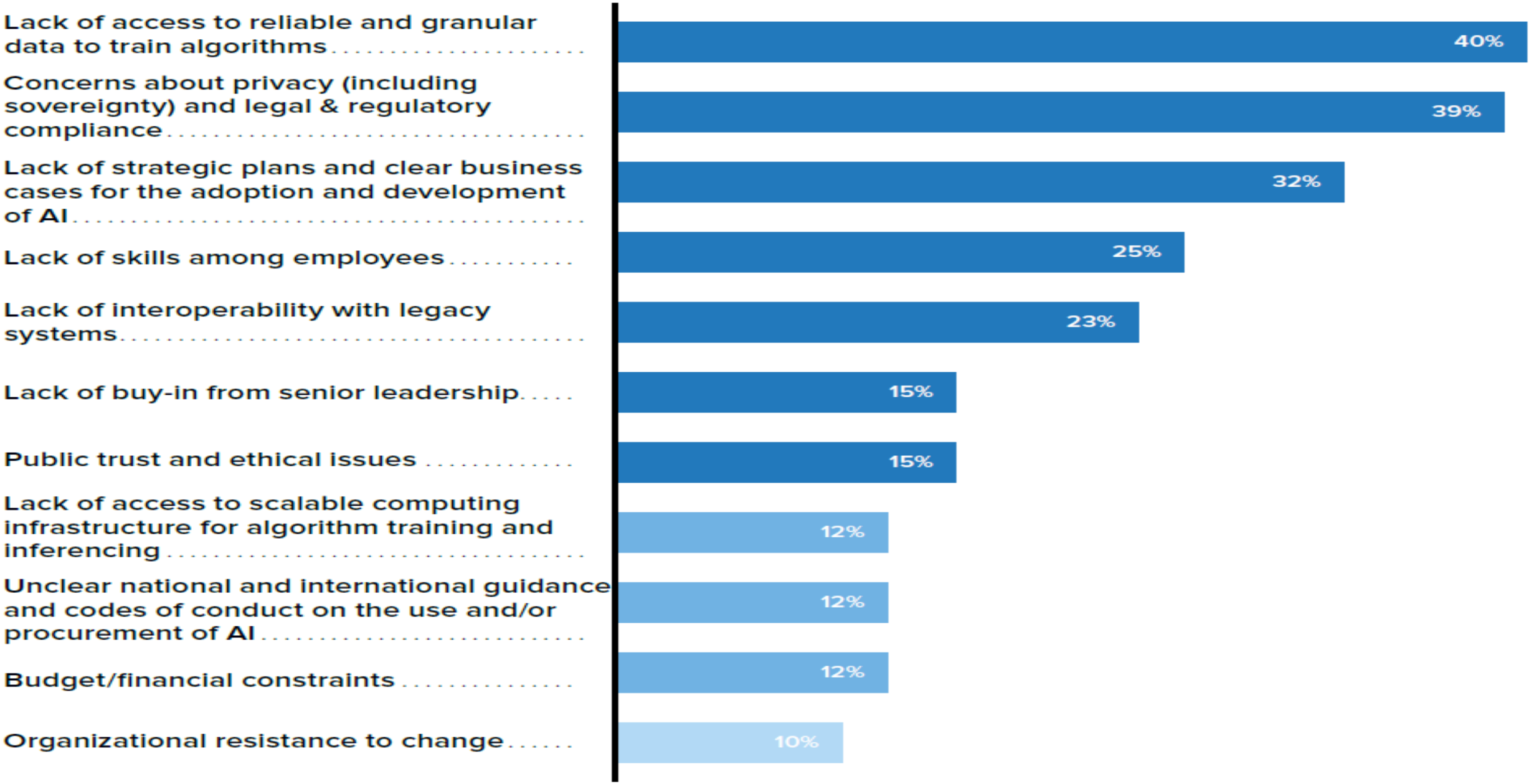
How Are Governments Sourcing AI?



Source: IDC's European Public Sector AI Procurement Survey, conducted for Microsoft, March 2024 (N = 330)

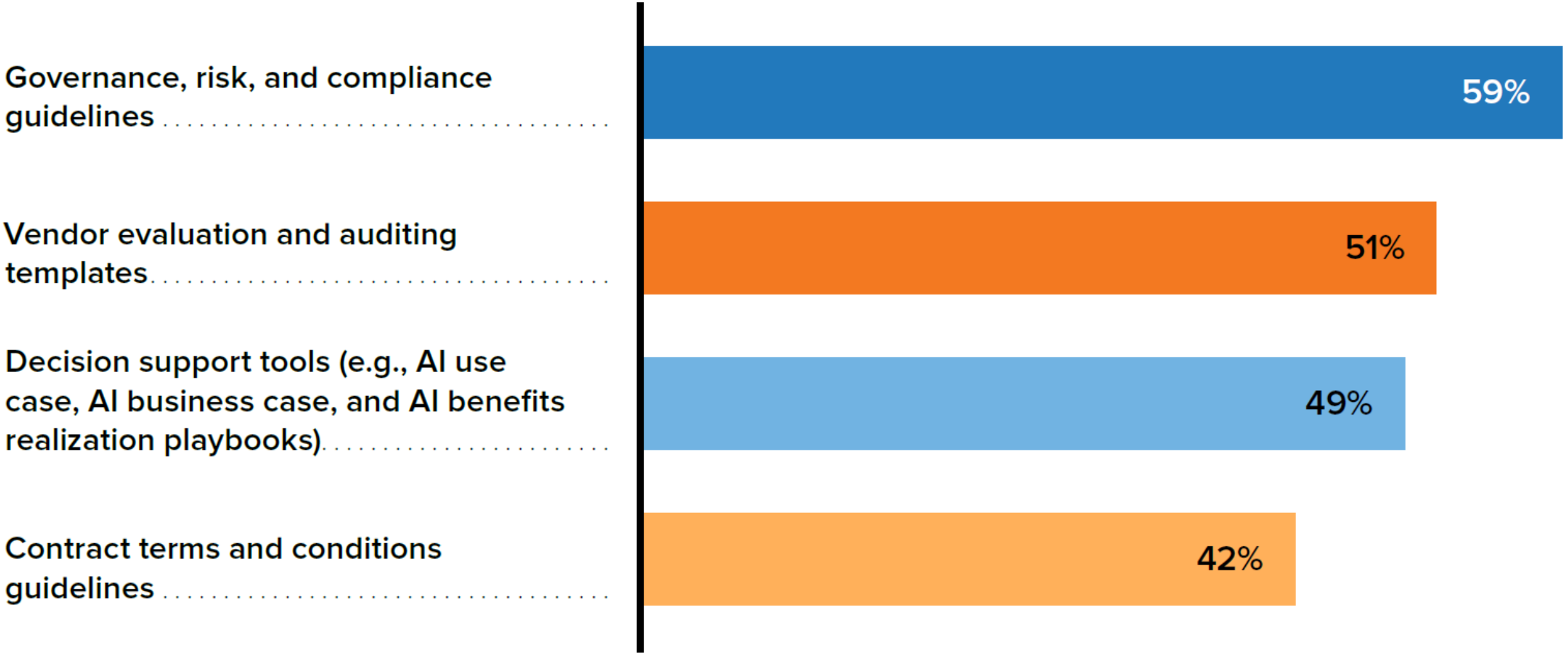

“
For all kinds of IT, we first go to SaaS. if we cannot find anything, we go to PaaS. If not, then IaaS.”
— The CIO of a local government in Europe

European Governments' Main Challenges when Procuring AI Capabilities



Source: IDC, European Public Sector AI Procurement Survey, [illegible]

Internal Guidelines and Tools European Governments Have Created or Will Create for More Effective AI Procurement



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Strategy and Governance

Establish a data and AI center of excellence. Ensure that IT, procurement, and line-of-business experts are represented.

Design a roadmap of AI use cases. Make sure to include “improvement use cases,” where AI can increase the efficiency and effectiveness of existing processes, and “art-of-the-possible use cases,” where AI can enable service innovation.

Prioritize investment cases based on the use case roadmap. Use measurable KPIs, aligned with the department/agency’s strategic outcomes to monitor achieved milestones and release incremental budget accordingly.

Take the opportunity to update and re-engineer processes before embedding AI capabilities to maximize the benefits.

Up until now, the digital transformation of technology-related decisions has been driven by IT. But now, one of the big differences I see is that the internal users and those on the business side are the influencers, pushing for the AI solutions that support them, and it's now the IT departments trying to keep up."

— A CIO of a local government department

Q&A

Be

Happy

Healthy

Wealthy