OrionX
AI/ML/DL Customer Survey

July 20, 2017

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OrionX.net

OrionX AI/ML/DL Survey Goals

- Current approaches and future plans regarding:
  - Artificial Intelligence (AI)
  - Machine Learning (ML)
  - Deep Learning (DL)

  For example:
  - Budgeting
  - Current status
  - Technology choices
  - Decision making
  - Vendor selection criteria
  - etc.

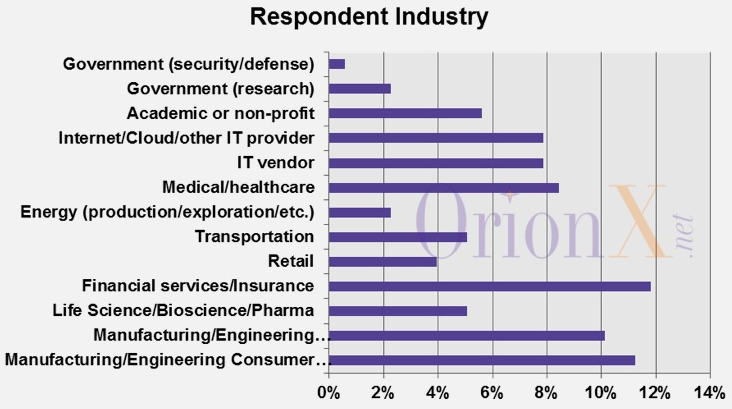
- Envisioned uses of survey results:
  - Help set strategy
  - Help guide investments
  - Validate assumptions based on industry pulse and customer sentiment
  - Identify existing strengths of offerings, and areas of opportunity or concern
  - Customer perspective to help position future offerings
  - Credible and compelling content to fill gaps between product launches

Survey Logistics/Statistical Summary

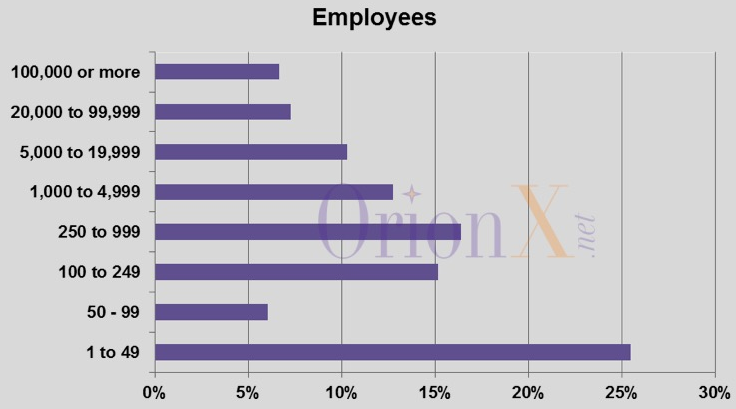
- Survey was produced in Q2-Q3 of 2017
- Target respondents: those with expertise in and involvement with AI/ML/DL projects
  - Validated via initial questions and some level of cross-references on answers
- Total respondents: 308 individuals in 308 organizations
  - Survey ran for a period of 4 weeks.
  - Results were tabulated every 3 days after the 3rd week.
  - Survey continued to run until results remained statistically unchanged over the final 50 responses.
- Confidence interval: 95%
- Margin of error: 5.58%
- More than 140 individual questions/data points

Respondents' Organization

Industry

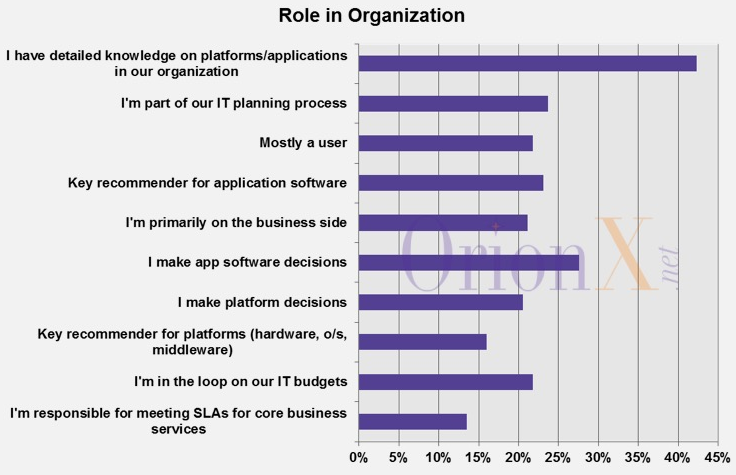


Number of employees



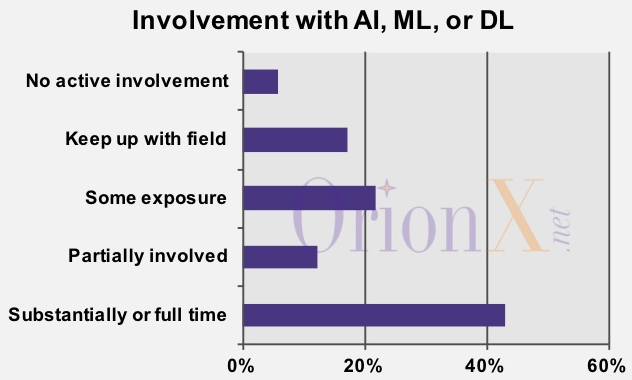
Respondents

Role in Organization

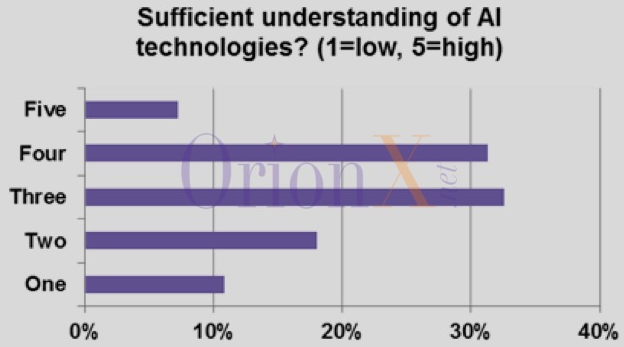


Respondents

Current Involvement with AI



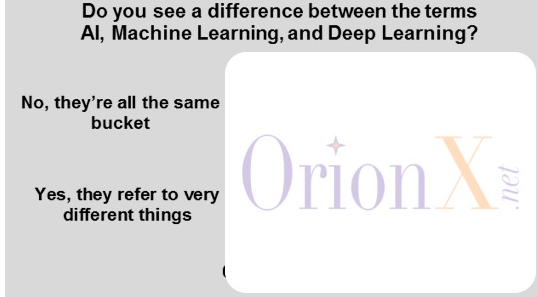
Understanding of AI



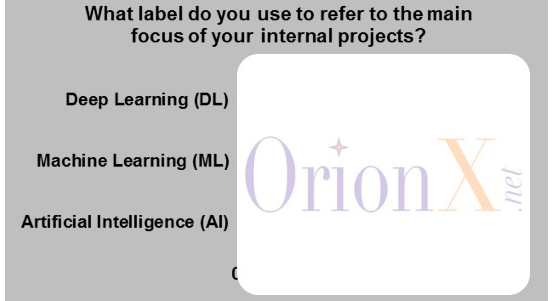
Taxonomy

DW/BI/BigData/Analytics?

DL/ML/AI ?



What label do you use?

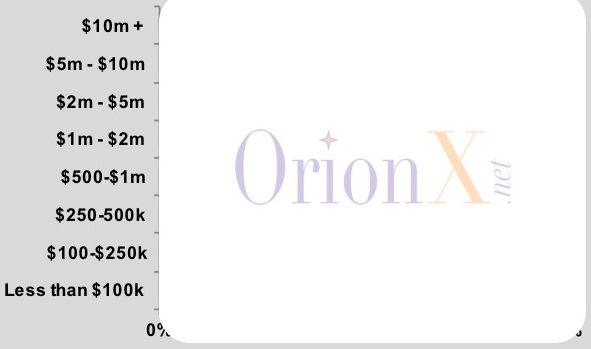


Current AI Budgets – Hardware

Current HW spending slightly favors cloud

On-premises HW

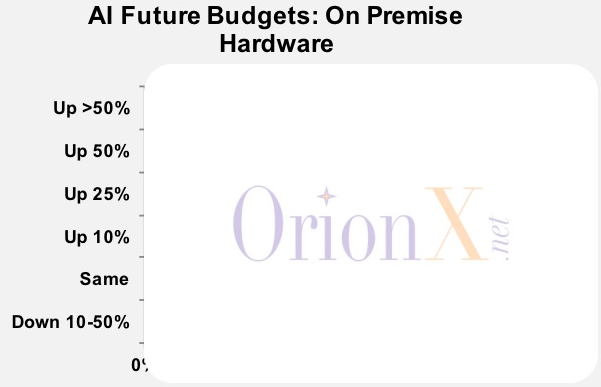
Off-premises HW or Cloud



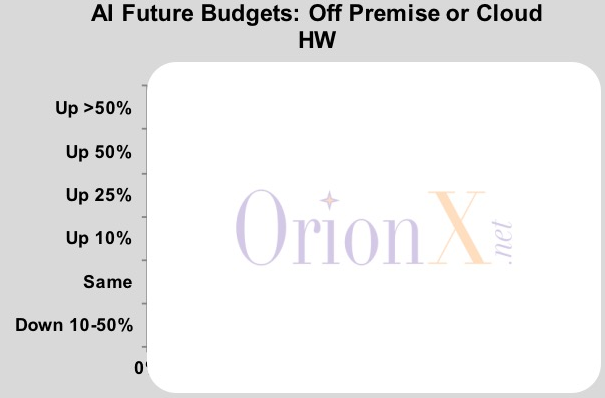
Future AI Budgets – Hardware

Growth in HW spending slightly favors cloud

On-premises HW



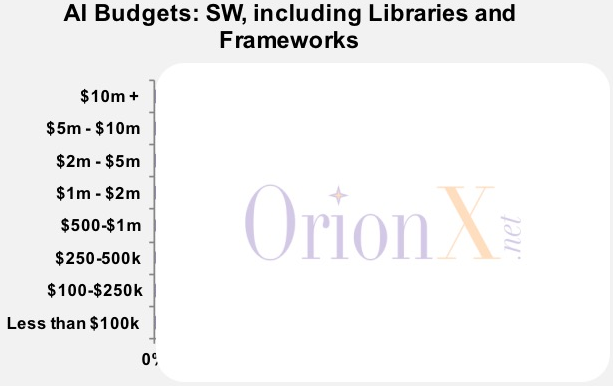
Off-premises HW or Cloud



Current AI Budgets – Software & Applications

Major impact by free open source software

SW, Libraries, Frameworks

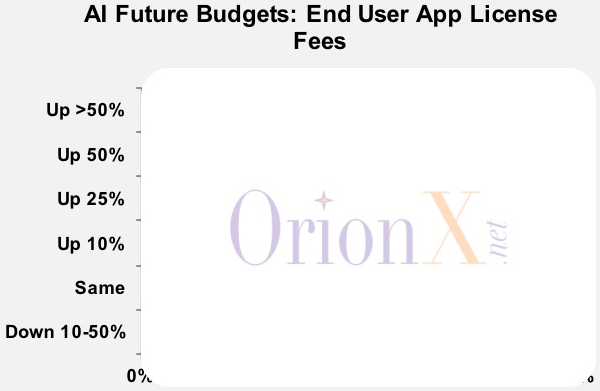


End-user App License Fees

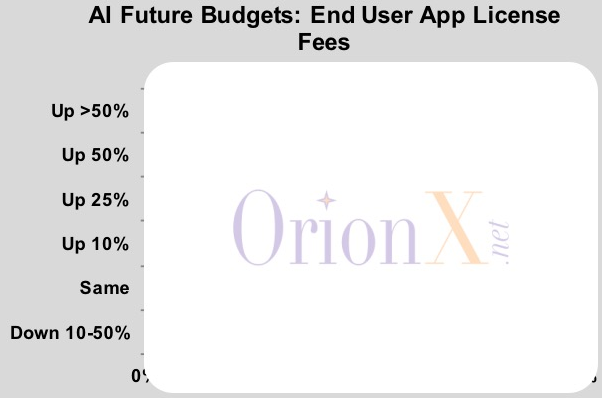
Future AI Budgets – Software & Applications

Growth in SW spending is expected

SW, Libraries, Frameworks



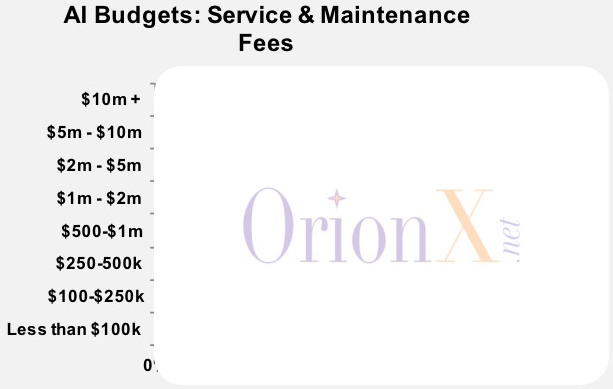
End-user App License Fees



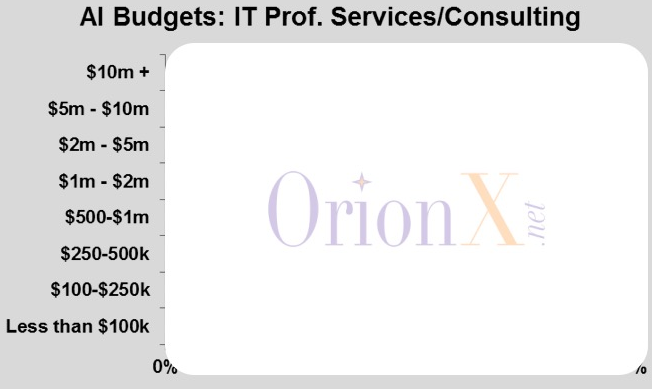
Current AI Budgets – Services, Consulting, Maintenance

Significant spending on PS indicates skill shortage

Service and Maintenance



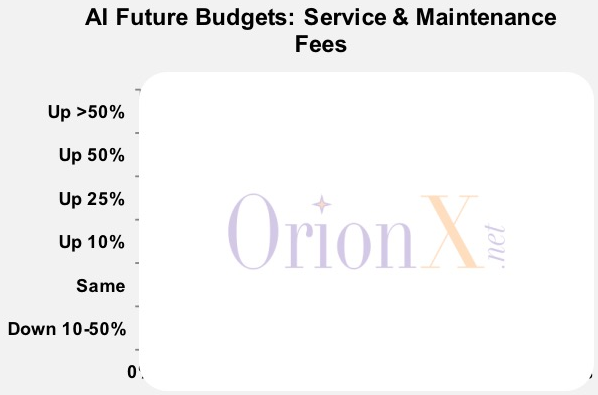
Professional Services / Consulting



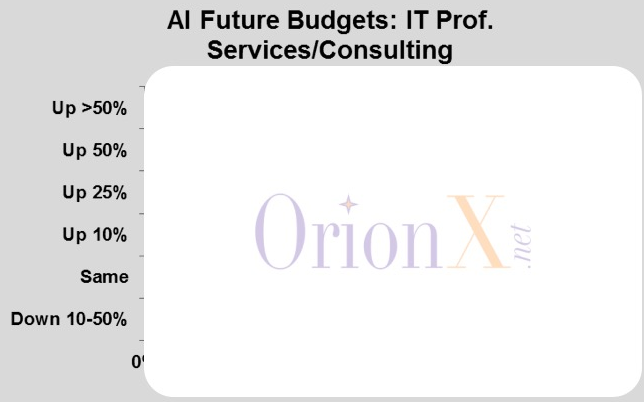
Future AI Budgets – Services, Consulting, Maintenance

Skill shortage is expected to continue, benefiting PS

Service and Maintenance



Professional Services / Consulting



Current AI Budgets – Training, Staffing

Education & Training

Staffing & Recruitment

Future AI Budgets – Training, Staffing

Largest spending growth is to address skill shortage

Education & Training

Staffing & Recruitment

AI Decision Makers

Decision making is similar to other IT spend

AI Framework

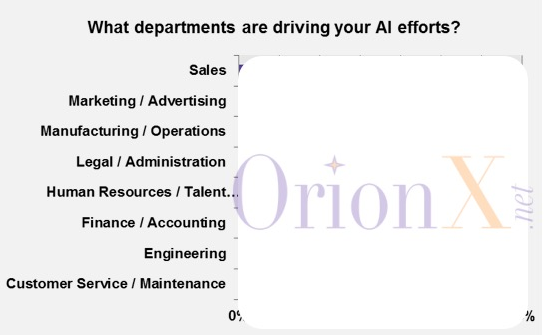
Application Architecture

Hardware/Systems

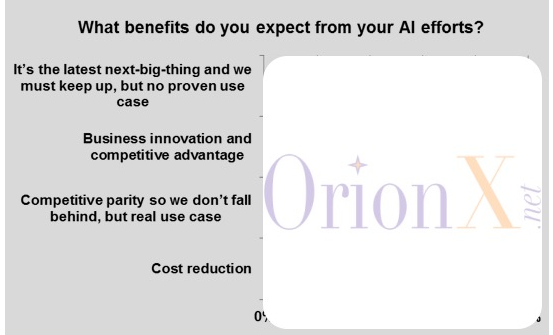
Why / How AI?

Main expected benefits of AI are competitive advantage and cost reduction

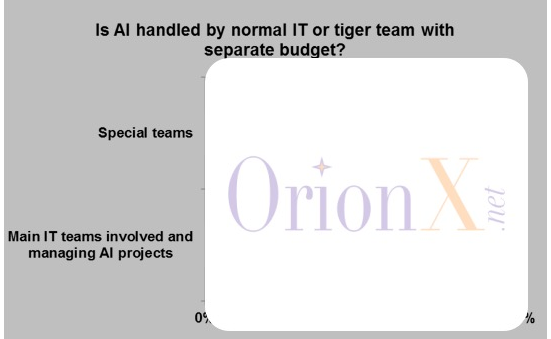
What department driving?



What benefits?



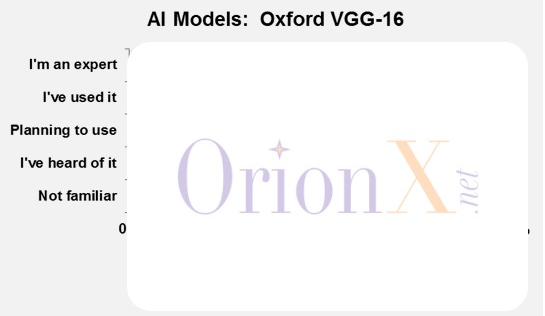
Tiger team?



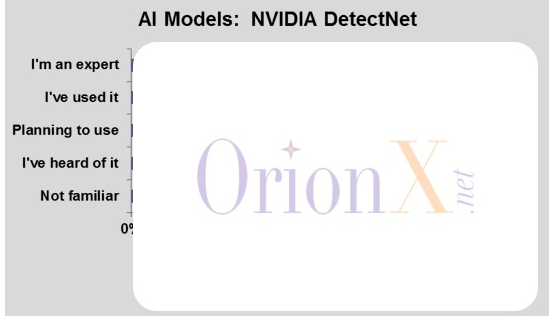
AI Visual Models

Visual recognition AI is not dominant

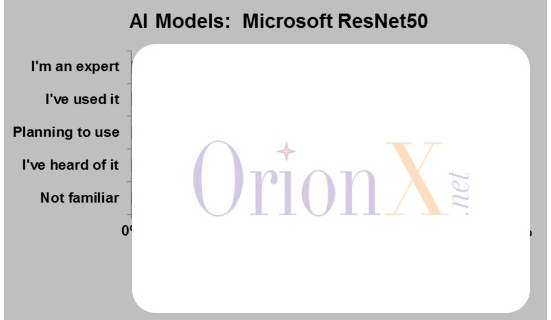
Oxford VGG-16



NVIDIA DetectNet

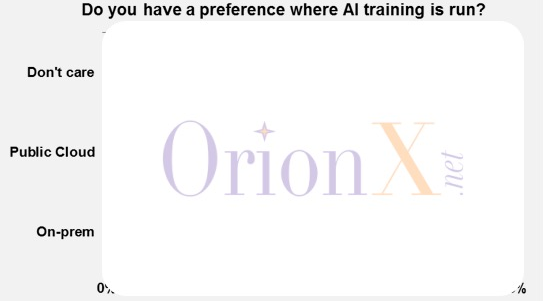


Microsoft ResNet50

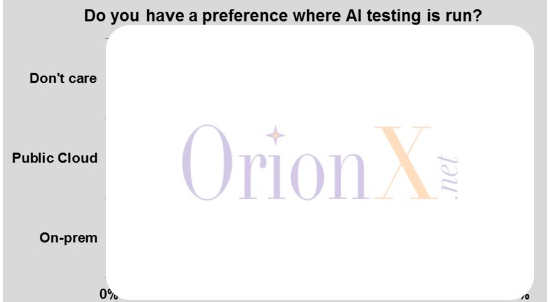


On-premises or Cloud?

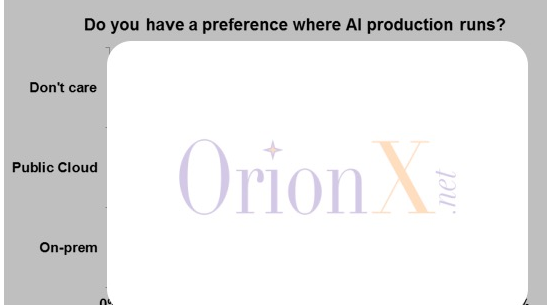
Training



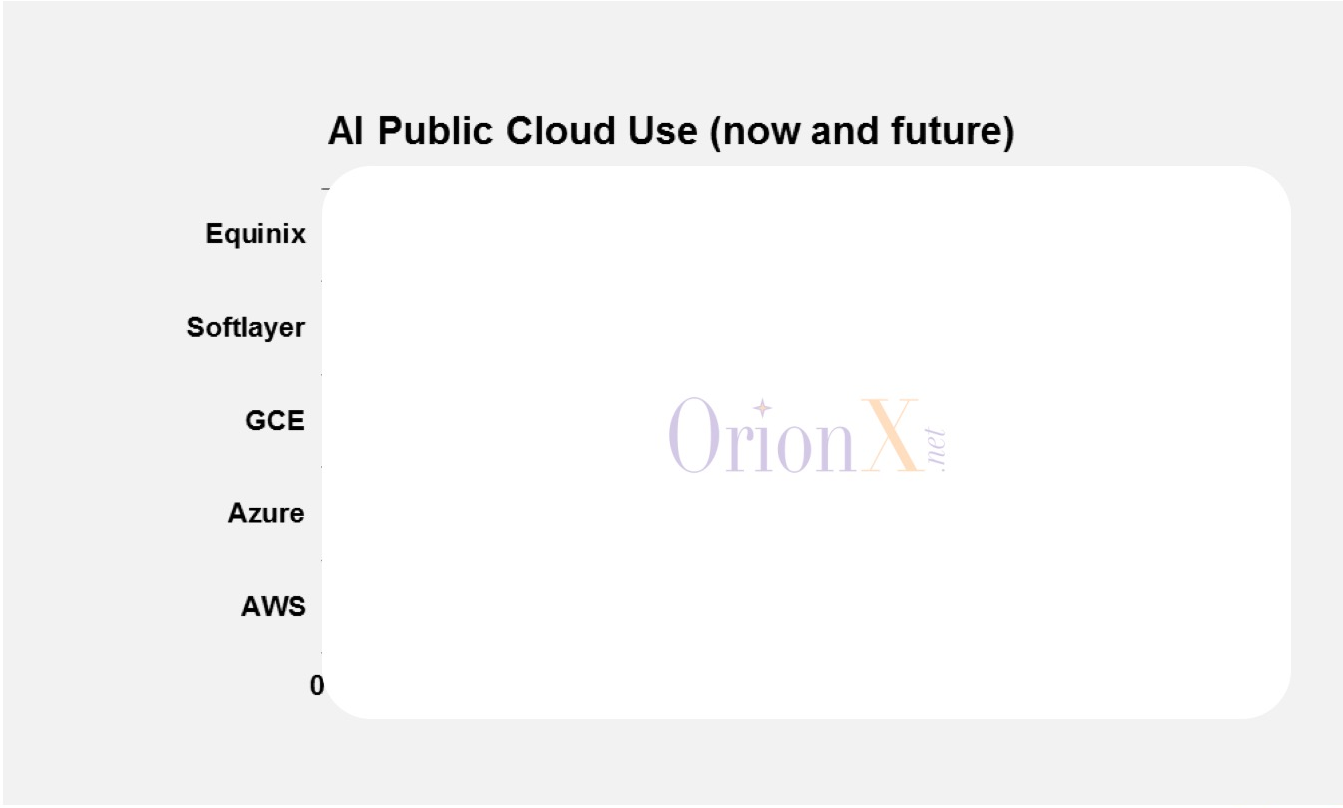
Testing



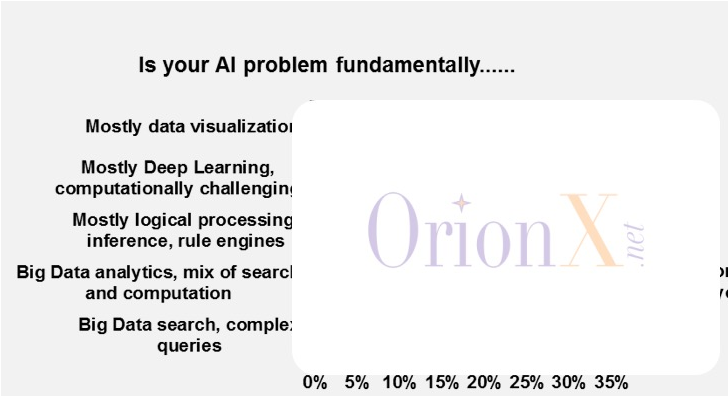
Production

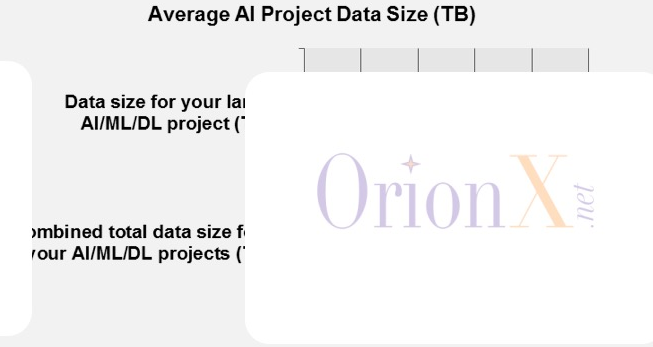


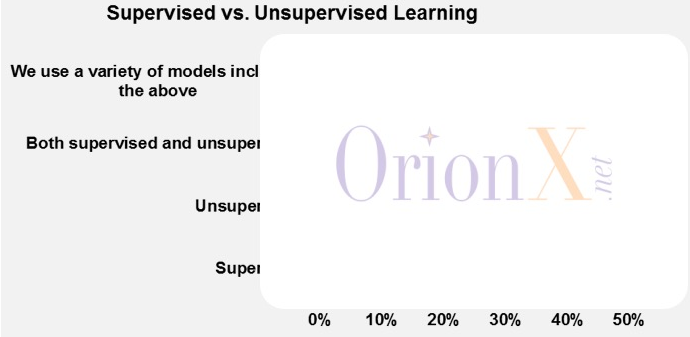
Public cloud preference

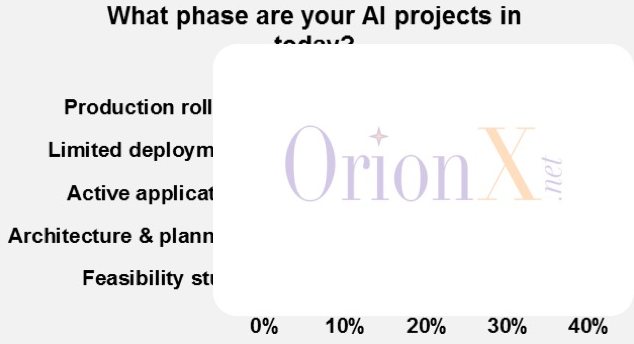


AI Project Attributes



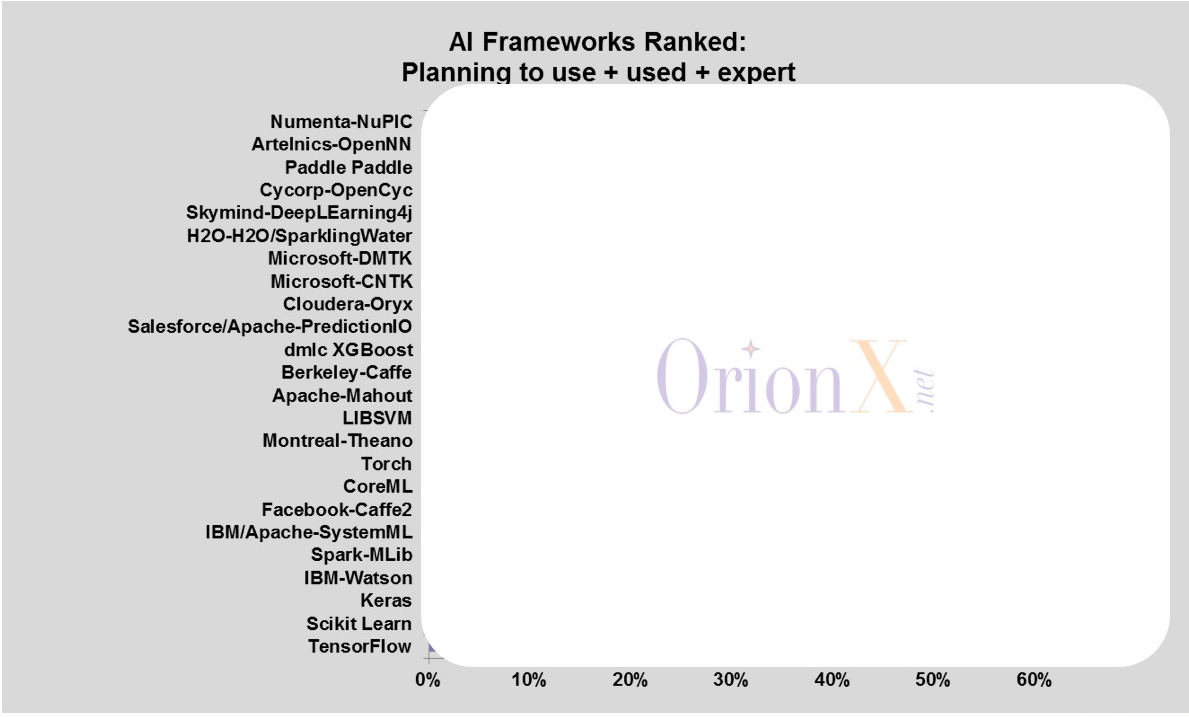




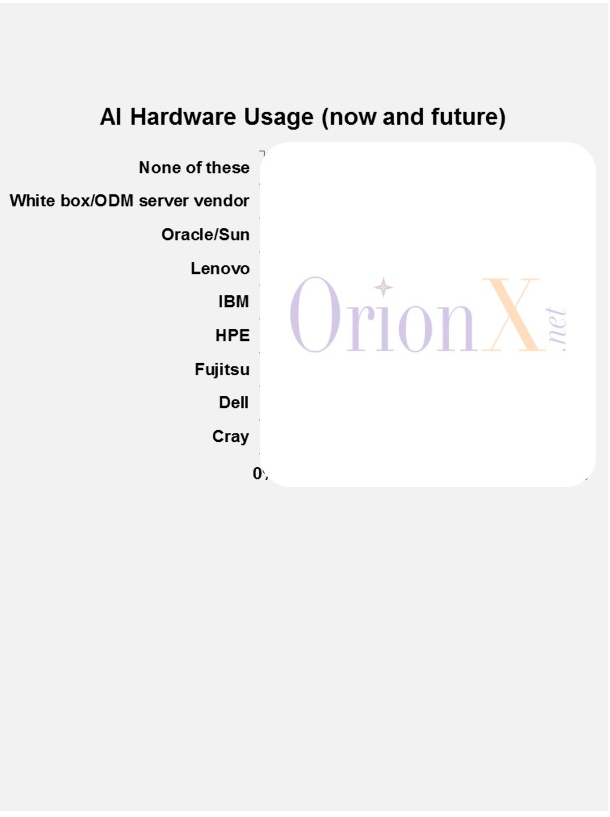


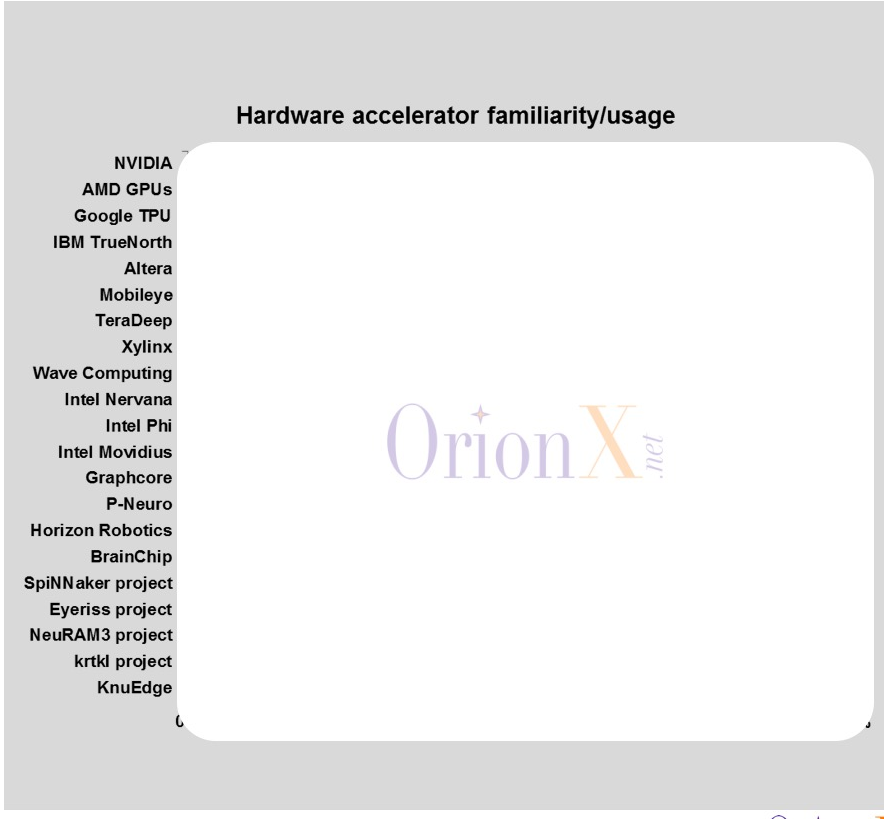
Still an open field

AI Framework Ranking



Hardware

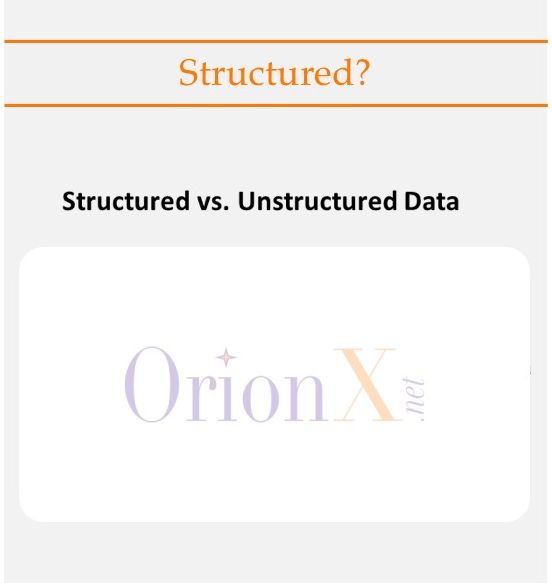

AI Hardware Usage (now and future)
None of these
White box/ODM server vendor
Oracle/Sun
Lenovo
IBM
HPE
Fujitsu
Dell
Cray
0


Hardware accelerator familiarity/usage
NVIDIA
AMD GPUs
Google TPU
IBM TrueNorth
Altera
Mobileye
TeraDeep
Xylinx
Wave Computing
Intel Nervana
Intel Phi
Intel Movidius
Graphcore
P-Neuro
Horizon Robotics
BrainChip
SpiNNaker project
Eyeriss project
NeuRAM3 project
krtkl project
KnuEdge

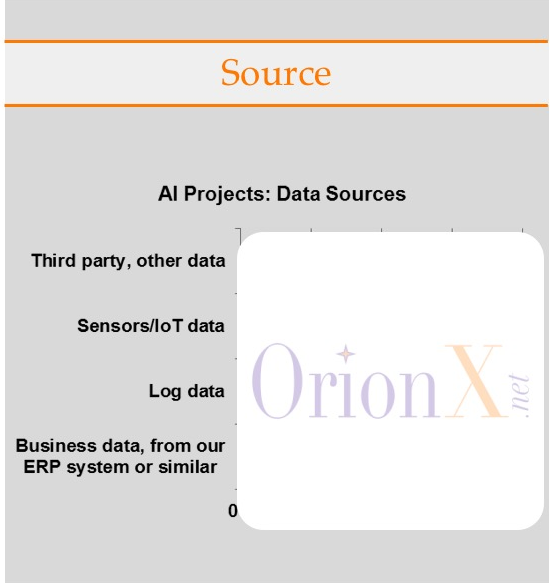
Data Attributes

Text and Numbers continue to dominate

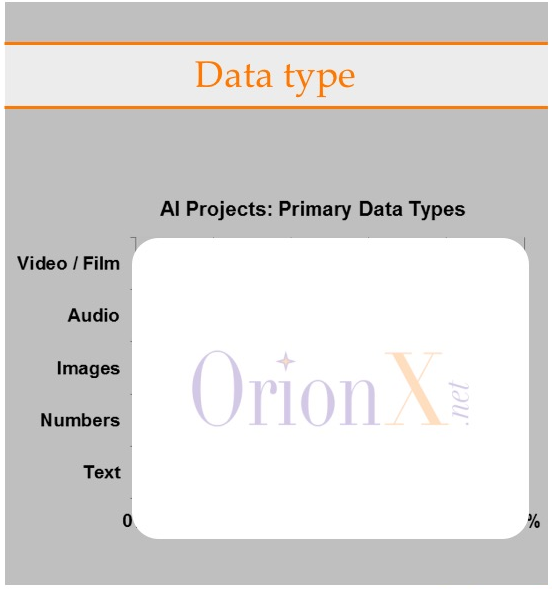
Structured?



Source

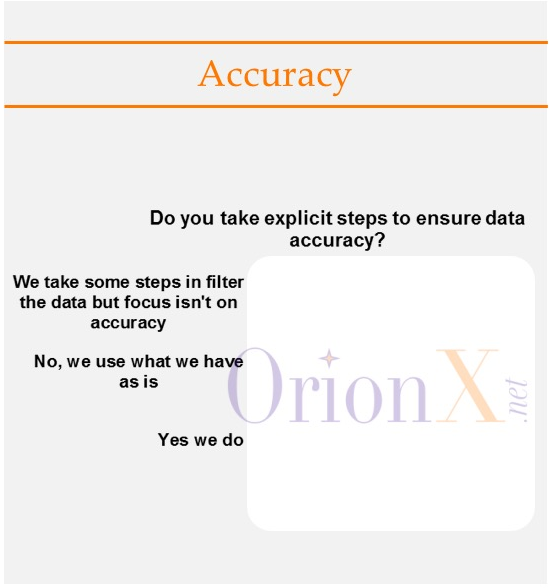


Data type

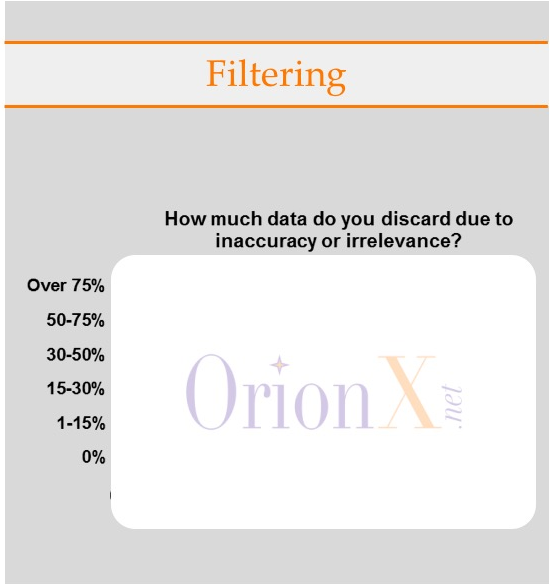


Data Quality

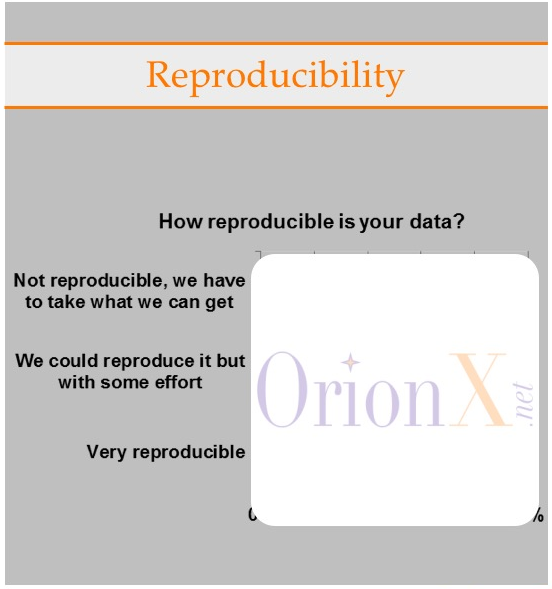
Accuracy



Filtering



Reproducibility

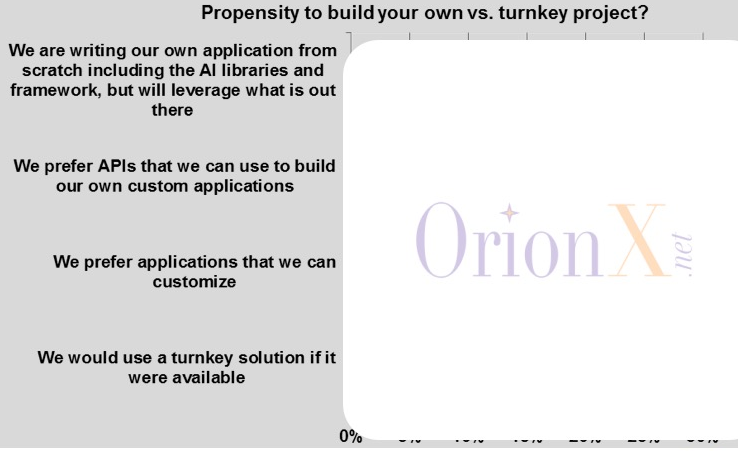


App Development

Mostly in-house, Mostly custom

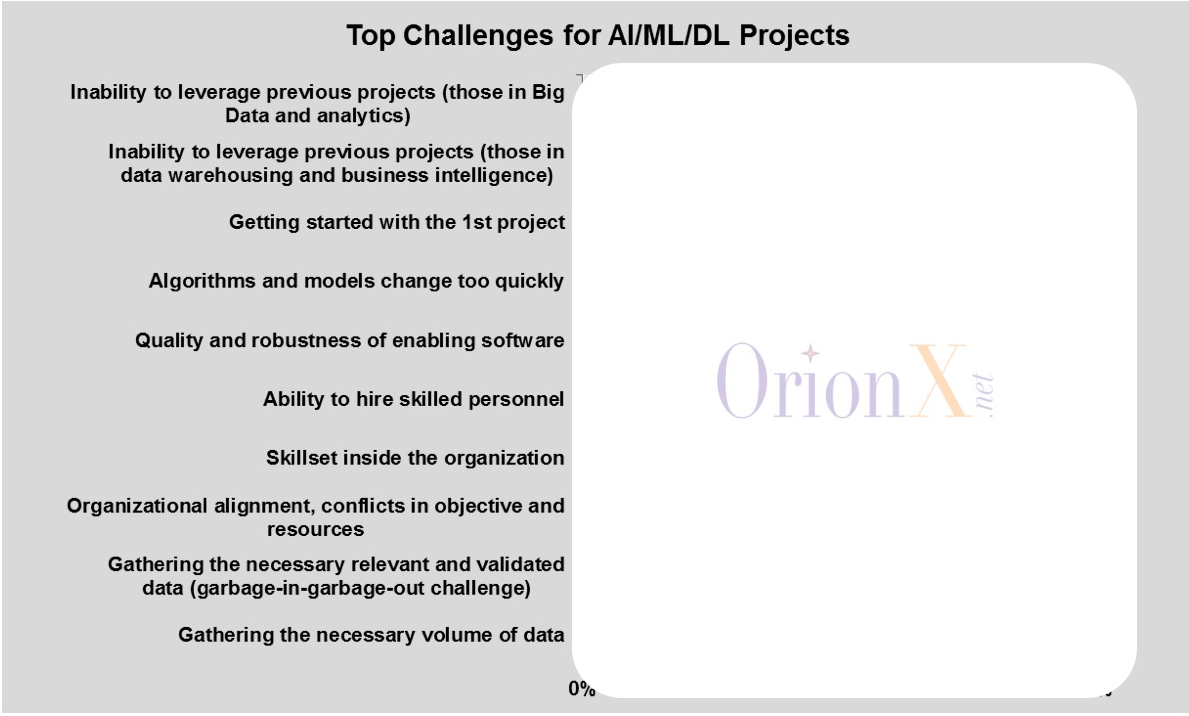
In-house or contractors / PS?

Build vs API vs Customize vs Turnkey



Top Challenges

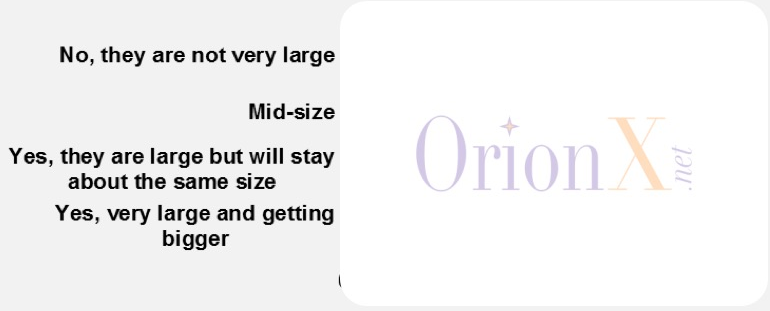
Data and Skills are the Top Challenges



App Size and Scale

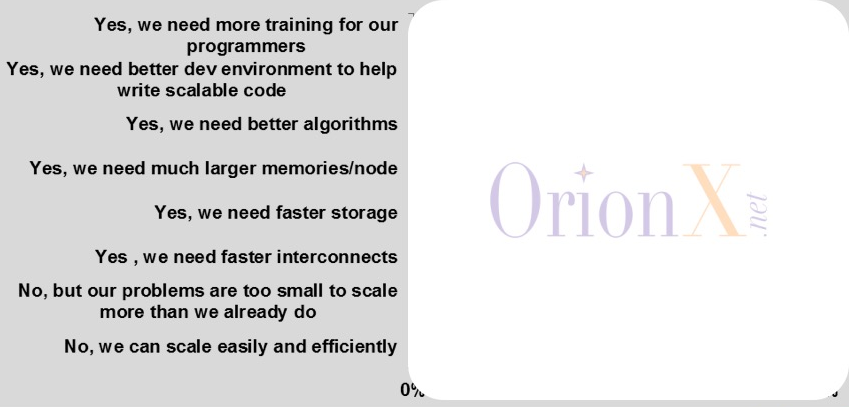
Size

Would you characterize your AI projects as "large scale"?



Scale

Is scaling your AI projects a challenge"?

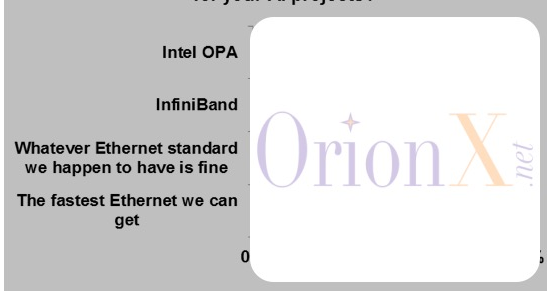


Cluster Configurations

Total # nodes in all clusters

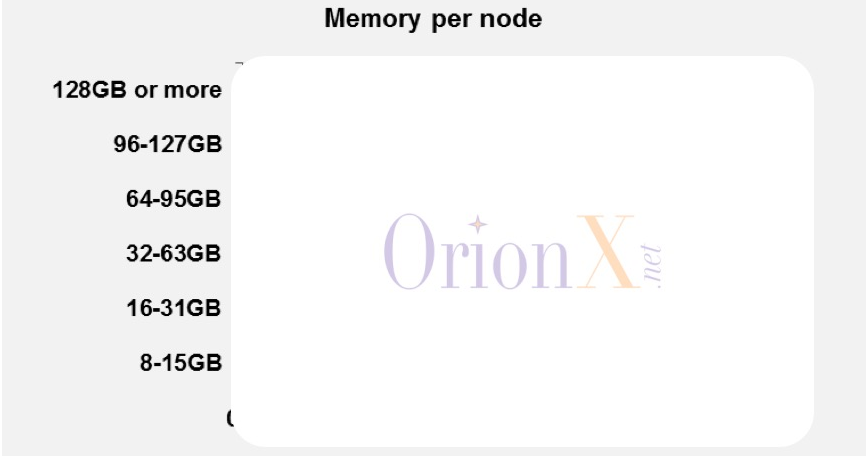
nodes in largest cluster

Interconnect

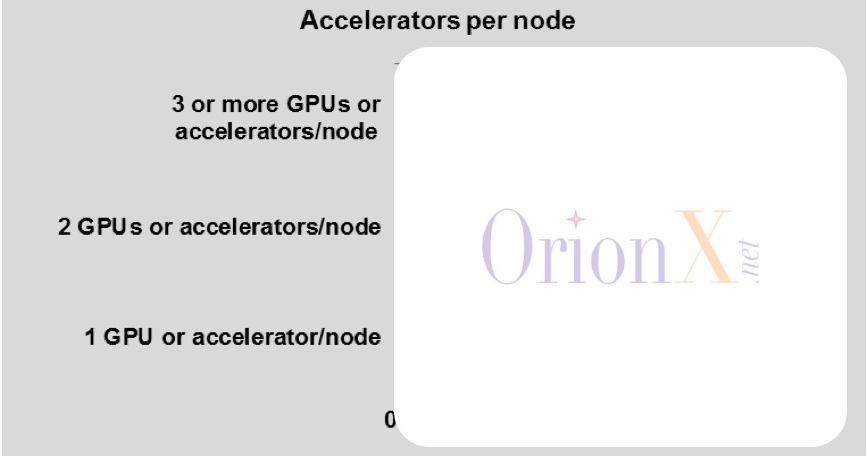


Cluster Node Configurations

Memory per node



Accelerators per node



Vendor Selection

Grasp of market offerings

Do you feel you have a good grasp of what the market has to offer for AI hardware and software

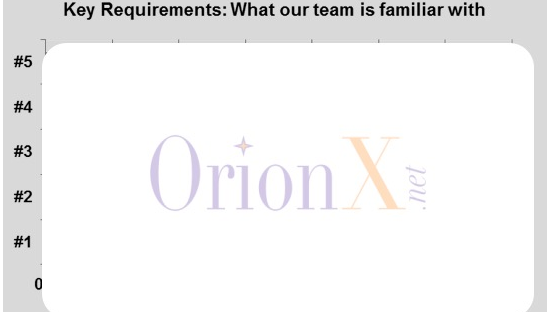
Product-first vs. Vendor-first

Do you pick the product first or the vendor first?

Selection Criteria: Key Requirements, 1/2

Skills to deploy

Team is familiar



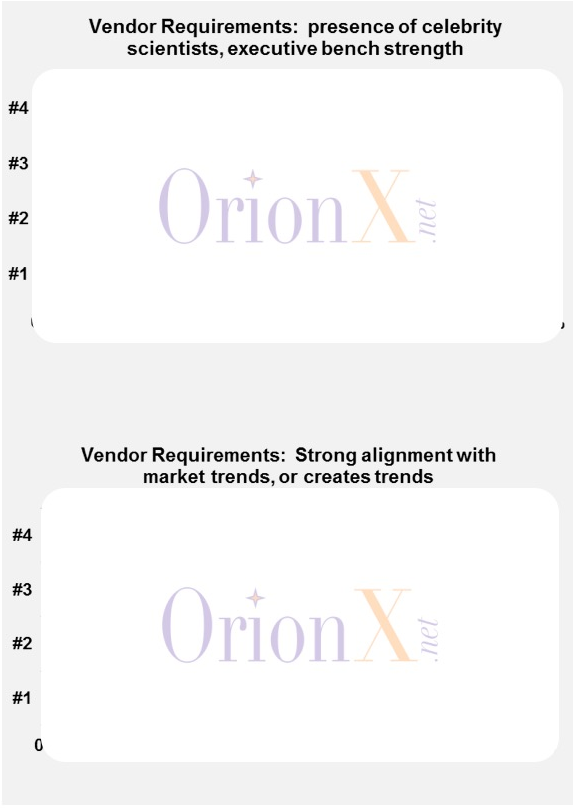
Right feature/function

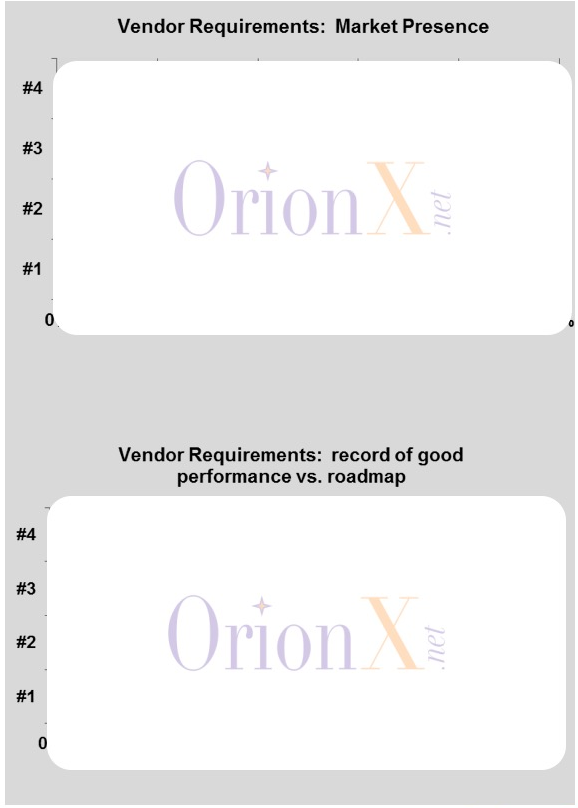
Selection Criteria: Key Requirements, 2/2

Open Source?

Product Rodmap

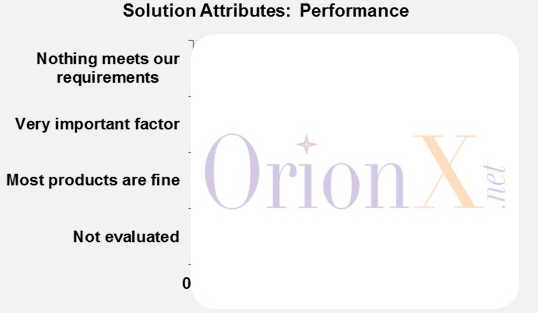
Selection Criteria:
Vendor Requirements



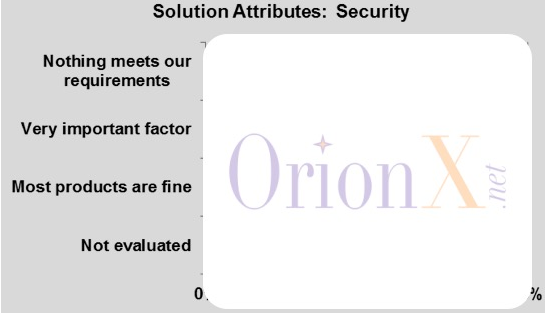


Desired Solution Attributes, 1/2

Performance



Security



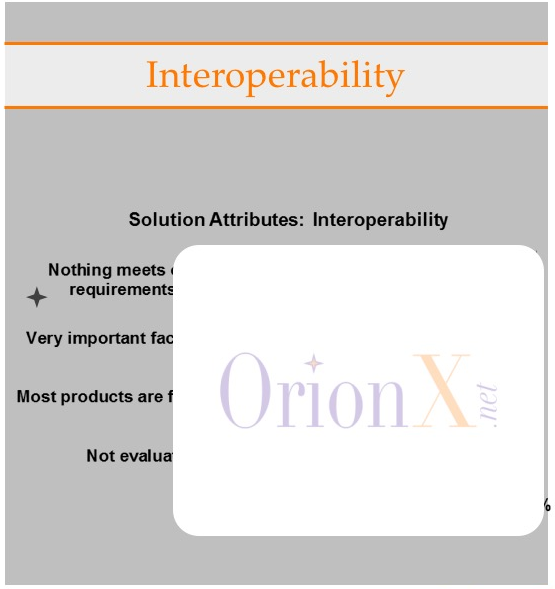
Robustness

Desired Solution Attributes, 2/2

Ease of use

Ease of adoption

Interoperability



Thank you!

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