Red Hat Summit

Connect

AI-Powered Telecommunications

Driving Efficiency and Innovation

Fer Alvarez

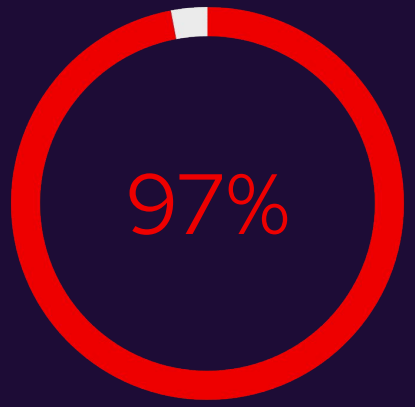
Associate Principal Solutions Architect

Red Hat Telco EMEA

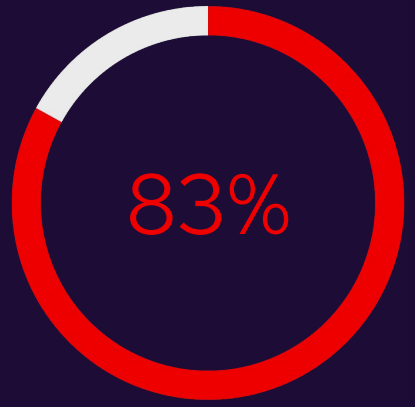
Let's ~~walk~~ cycle this telco challenge together!

1. State of the Telco AI
2. The AI Opportunity
3. AI adoption paths
4. Problems with AI adoption
5. The platform approach
6. Summary / Q&A

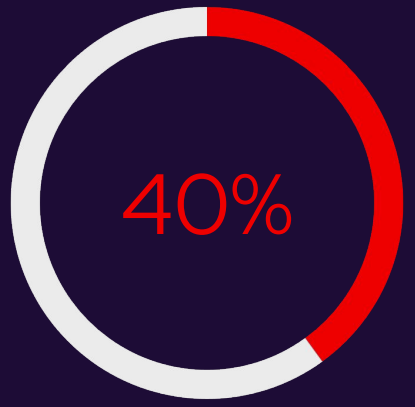
1. State of the telco AI



are adopting or assessing AI in their operations



reports a positive impact on revenue



plans to use open-source tools (+28% YoY growth)

source: State of AI in Telecommunications (2025 trends), Nvidia

The modern Telco Dilemma

- Data explosion (5G, IoT)
- Intense competition
- Rising Operational costs
- Evolving customer expectations

competitive advantage

2. The AI opportunity

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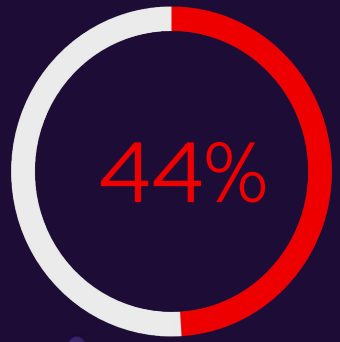
Reinvent Customer Experience

- Churn prediction
- Hyper personalization
- Intelligent Assistants

Reduce churn

2. The AI opportunity

Reinvent Customer Experience



optimizing customer experiences is a priority. 49% actively adopted or assessing generative AI use cases.

source: State of AI in Telecommunications (2025 trends), Nvidia

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Reduce churn

Optimize Infrastructure

- Predictive Maintenance
- Capacity Planning
- Power Management

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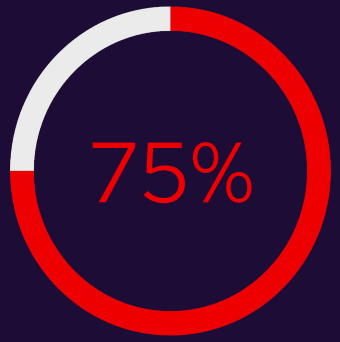

telco's total power is Radio Access
15-20% savings thanks to AI

source: AI-RAN: Navigating the path from hype to commercial reality, STL partners, 2025

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Reduce costs

Unlock new revenues

- Vertical enterprise services
- Fraud detection
- New digital offerings

Increase business

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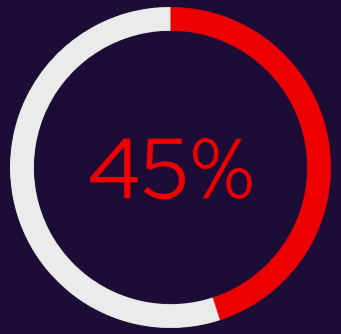

have increased annual revenue growth > 5%

source: State of AI in Telecommunications (2025 trends), Nvidia

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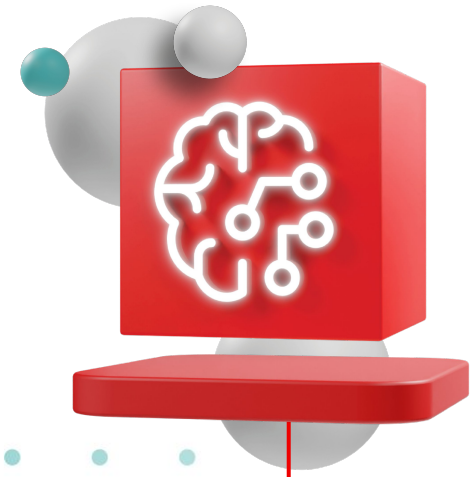
Telco AI Use Cases



Customer

AI + data platform

Infrastructure

Business AI use cases

- Vertical Industry Services
- Customer care and behavior
- Virtual digital assistants
- Network Assistant
- Sales / Tech Guides
- Workforce/ Tech deployment
- Service churn rates
- Pricing guides
- Contract Management
- Digital XaaS

Network Use Cases

- Resource Usage
- Network / Capacity Planning
- RAN Balancing
- Power Management
- Predictive Maintenance
- Fraud Detection
- Improve Radio Performance
- Network Slicing / SLAs
- Distributed RAN Optimization
- Link / UE Power Efficiency
- AI Offload
- AI Services

3. Paths to AI adoption

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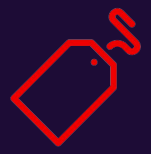

Buy

- Vendor - driven
- AI embedded in products
- Ready to use
- e.g: fraud detection , embedded in billing system

“the black box”

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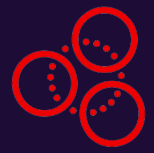

Integrate

- System Integrator driven
- Choose from catalog
- Develop customizations
- e.g: close-loop network automation

investment / differentiation tradeoff

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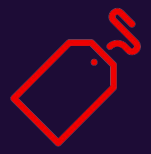

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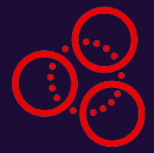

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- Telco drives
- Tailor made
- Develop your environment
- e.g: radio performance based on user metrics

potential business differentiator

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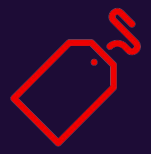

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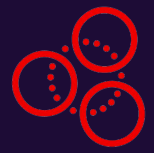

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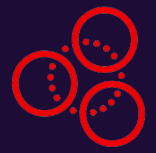

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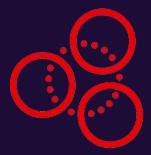

Integrate

Build

the

PoC purgatory

source: Red Hat Survey: UK Organizations Ready for Widespread AI Adoption, but Skills Gaps, High Costs and 'Shadow AI' Threaten Ambition

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Integrate

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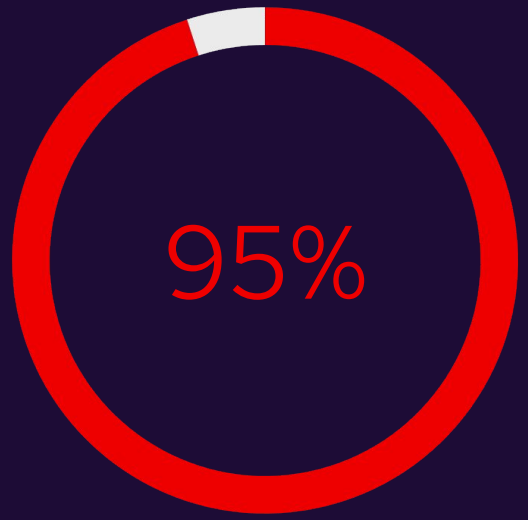

Experience barriers to AI adoption

source: Red Hat Survey: UK Organizations Ready for Widespread AI Adoption, but Skills Gaps, High Costs and 'Shadow AI' Threaten Ambition

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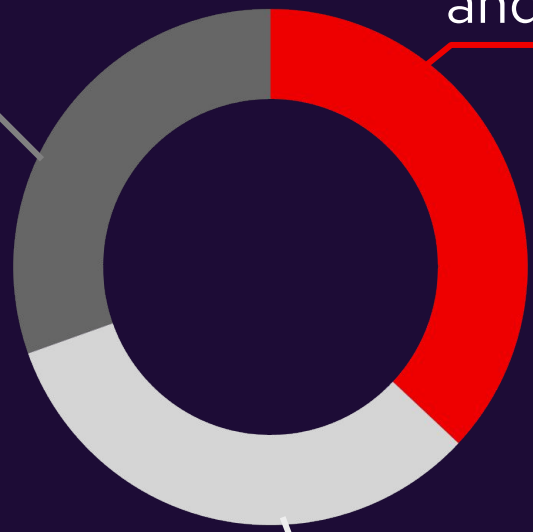

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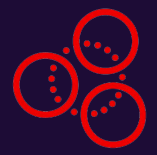

Integrate

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Why these fail

- Siloed teams
- Complex tooling
- Scalability issues
- Governance & Security

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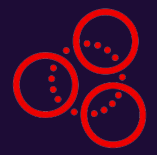

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Collaborate the opensource way

Telco-AIX: Inspire AI To Be Relevant &

- Open-source repository for Telco AI use cases
- Leverages data science and machine learning to address industry challenges
- Provides practical solutions, not just theoretical concepts

https://github.com/open-experiments/Telco-AIX

Experiments

Domain	Project	Focus Area
💰 Revenue Management	RAFM	Revenue Assurance & Fraud Detection
📊 Service Quality	Service Assurance Churn Prediction	Latency & NPS Predictions & Churn Predictions
🌐 Network Operations	5G Network Ops	Fault Predictions
🌿 Sustainability	Energy Efficiency	Green Telecom Initiatives
🔒 Security	SecOps-AI	Networking Security
⚡ Smart Infrastructure	AI Powered SmartGrid	Grid Optimization
🛡️ IoT Security	IoT Perimeter Security	Perimeter Security
🤖 Advanced AI	5G CNF RCA with LLM	Root Cause Analysis
💬 Customer Experience	CRM Voice App	Intelligent Customer Interactions
🔍 Anomaly Detection	RootCause Analysis	Model Chaining & RAG
🛰️ Connectivity	Starlink QoE	Satellite ISP Experience
🖥️ Network Operations	NoC AI Augmentation	OSS Optimization
🎩 IT Management	ITSM Automation	Intelligent Service Management
🤖 Agentic Telco-AI	Agentic Framework Autonomous 5G Network	Agentic Telco

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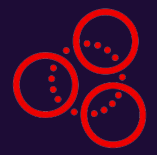

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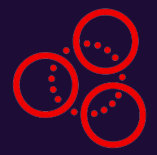
Customize your preferred model using enterprise data to build an efficient, cost-effective solution.

Red Hat AI provides:

- ✓ Validated and optimized models ready-to-use
- ✓ Data ingestion capabilities
- ✓ Synthetic data generation pipelines
- ✓ Multiple alignment techniques

4. The problem



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The requirements of an enterprise AI production systems

Identifying the tradeoffs of inference

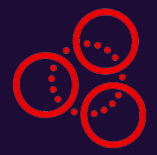
Need to be fast and **accurate** in its responses

Manage processing times and token output to control **cost**

Deliver high throughput and lower latency for best **performance**

Red Hat

4. The problem



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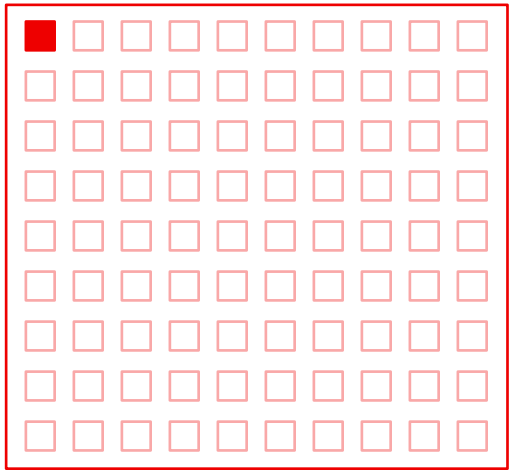
Enterprises need models aligned to their private data

LLMs are trained with a range of public data, not enterprise-relevant data



Less than 1% of all enterprise data is represented in foundation models

Enterprise organizations need to

1. Start from a trusted base model
2. Create a new representation of their data
3. Deploy, scale, and create value with their AI
4. Own their own data

5. A better way: the platform approach

A consistent, end-to-end platform is key to success.

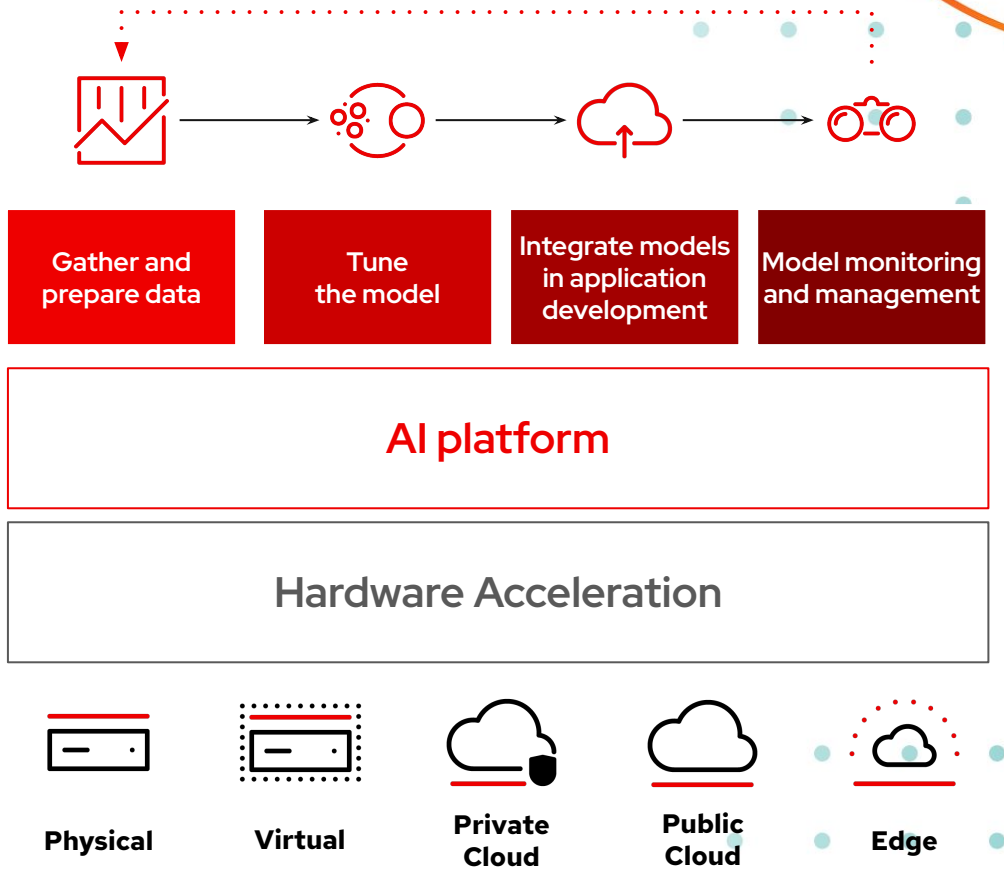
- Siloed teams
- Complex tooling
- Scalability issues
- Governance & Security

- Unified data scientists + dev + ops teams
- Single end-to-end platform
- Cloud native: operate and scale anywhere
- Be in control of your data

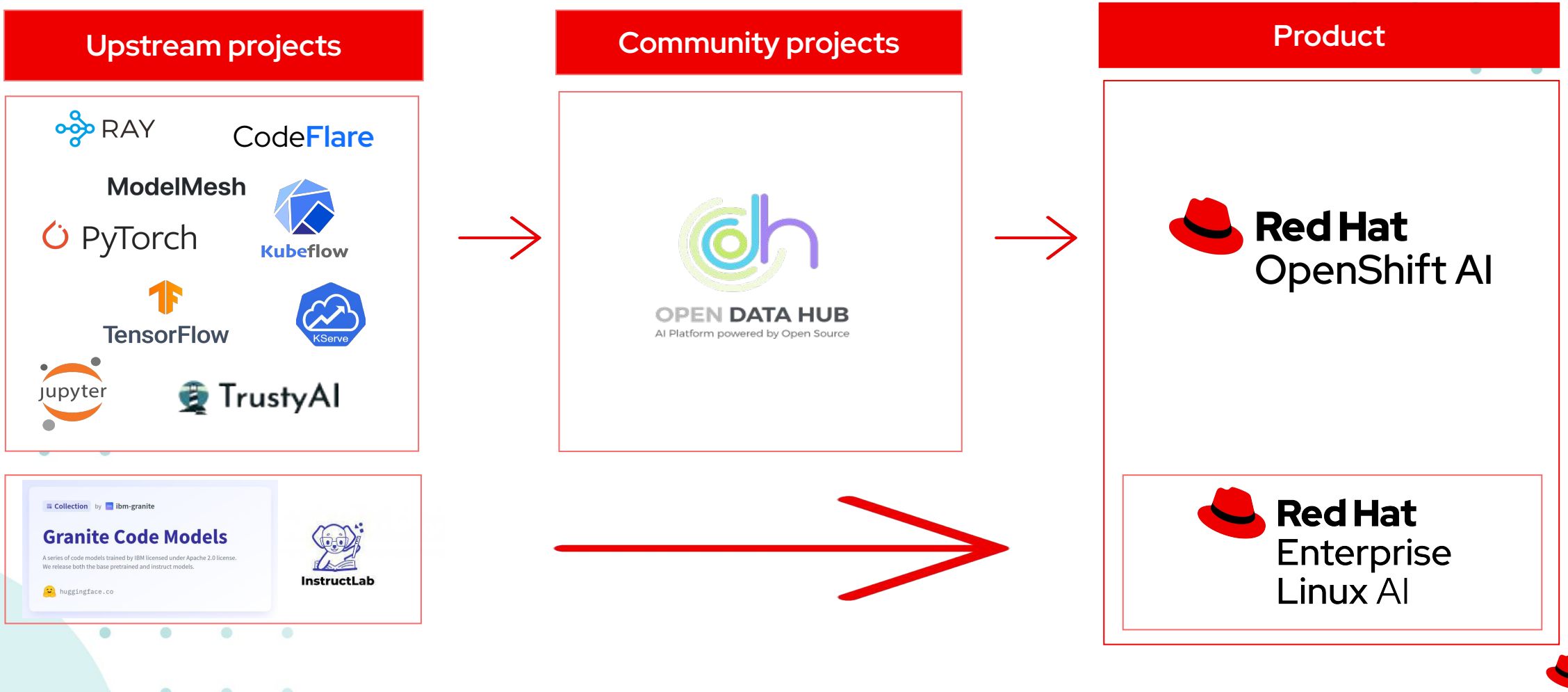
Red Hat AI provides a platform for consistently building, deploying and running AI models, AI-enabled applications, and AI agents across the hybrid cloud at scale.

It provides:

- An efficient inference runtime (vLLM)
- Validated and optimized third-party models
- InstructLab and RAG for customization
- MLOps and LLMOps capabilities
- GPU and Hardware slicing and management
- Monitoring, bias detection and guardrails



Red Hat's AI/ML engineering is 100% open source



Hybrid cloud deployment for AI

Across different hardware accelerators, on-prem OEM servers, and cloud environments

Hardware Accelerators

NVIDIA GPU

AMD Instinct

intel Gaudi

Roadmap

Google TPU

aws Neuron

IBM AIU

OEM Servers

DELL

Lenovo

CISCO

Hewlett Packard Enterprise

Cloud Environments

IBM Cloud

aws

Google Cloud

Azure

* NVIDIA GPUs fully supported in Red Hat AI. AMD Instruct $ Intel Gaudi in Preview, AWS Inferentia/Neuron, Google TPU, IBM AIU are on our roadmap

6. Summary: your way

Choose your path

- Buy
- Integrate
- Build

Platform is key

- Build + Integration
- Foster collaboration
- Centralized governance

OpenShift AI

- Open
- Scalable
- Secure

Red Hat Summit

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