AI Data Center Asset Capability Ladder

Akash Deshpande, Principal, Sky Blue AI[1]
July 1, 2025.

Overview

Because of high AI demand, asset developers are promoting a stream of new data center projects. Compared to traditional real estate development, AI data centers are complex, capital intensive, and risky. The pitfalls of AI data center development have led to infeasible project proposals popularized as "Fake Data Centers" [1, 2, 3, 4, 5, 6].

The Sky Blue AI Data Center Asset Capability Ladder provides an effective framework for AI capacity delivery. It breaks down the complex logistics, financials, and operations of AI data center development into discrete stages with well-defined milestones and value propositions. It is being published here for broader industry adoption to deliver AI capacity predictably, reliably, and rapidly.

This framework has emerged through project discussions over the past two years with data center developers, enterprise and hyperscale customers, and private equity firms. The framework provides a common vocabulary for stakeholders to talk about data center development and lays out the criteria for climbing the ladder from one development stage to the next, ultimately delivering "Real Data Centers".
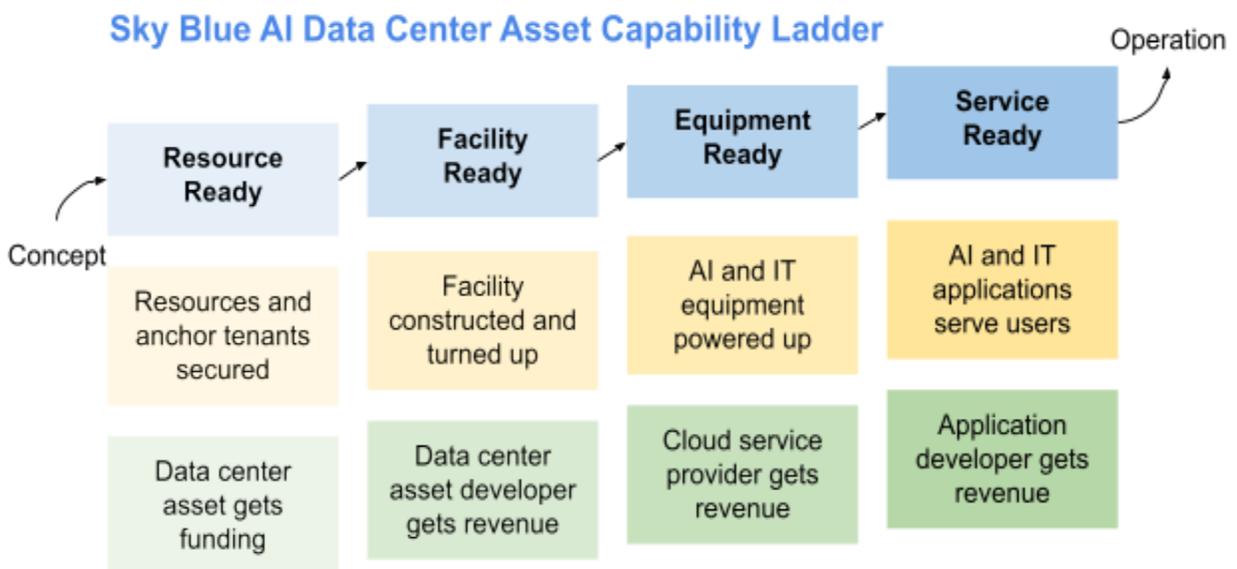
The Asset Capability Ladder

Data center acquisition teams at enterprises and hyperscalers reject more than 90% of proposals they receive due to critical gaps. Approaching the customer with evidence of having reached the appropriate milestone in the framework improves the chance of closing the transaction.

Concept

The project is ready for preliminary conversations with prospective partners

At concept, promoters scope out the key elements of the project, such as principals involved, site location, power, water and fiber availability, prospective customers, investors, local officials, technology partners, supply chains, and operators.

Resource Ready

The project is ready to start predictable facility construction

All resources required for a successful facility build have been secured and a firm timeline is projected for the build.

This includes formation of the asset developer entity, land purchase or long term lease with required rights to build and operate, appropriate zoning, power purchase agreement with one or more utilities, behind the meter power supply agreements such as natural gas, solar, wind, or other sources, contracts with utilities for water, dark fiber contracts for connectivity, supply chain contracts with committed delivery dates for critical long lead time facility equipment such as generators, transformers, chillers, etc., and construction partners with highly skilled trade crews.

The site, electrical, and mechanical plans are sketched, financial modeling of the offered service including monthly fee structure is prepared, a letter of intent to lease facility capacity is in hand from prospective anchor tenants, and an investment term sheet is secured from capital providers.

Facility Ready

Facility is ready for tenant AI and IT equipment

The data center facility is built out and ready to receive the AI and IT equipment.

This includes permitting, construction of the building shell and data halls, installation of primary, secondary, and backup power with distribution within the facility, installation of facility water loop for liquid cooling and cooling distribution, installation of meet me rooms with lit fiber for WAN connectivity, and provisions for physical security.

Equipment Ready

AI and IT equipment is ready to host application services

Tenants have moved in their AI and IT equipment, connected it to the power, cooling, and connectivity ports, interconnected the equipment with data center fabrics, and installed and turned up the Cloud and AI software stacks.

The specified hardware architecture in terms of aisle, rack, CPU, GPU, storage, scale up and scale out networking, and secure WAN connectivity, and software architecture in terms of compute orchestration, storage and networking layers, and observability are in place.

Operations processes such as hardware install, turnup, monitoring, repair, upgrade, migrate, decommission, inventory, warehousing, supply chain management, and software install, turnup, rollout, configuration, and monitoring are active.

Service Ready

Application services are ready for end users

Application developers have deployed services in the facility, and they are measuring and optimizing service performance, managing incidents, collecting usage statistics for demand, capacity, and redundancy planning, and enhancing observability and control for better service management.

Phase Mix and Financials

The same asset (campus or building, for example) may be in multiple stages for different development phases. For example, a 200 MW site may have 50 MW in the Service Ready stage, another 50 MW in the Equipment Ready Phase, another 50 MW in the Facility Ready stage, and the final 50 MW in the Resource Ready stage. Similarly, the same asset developer may have multiple assets in different stages of development.

While costs and revenues vary widely, typical cost from Concept to Resource Ready is $500K to $2M per MW, from Resource Ready to Facility Ready is $8M to $12M per MW, and Facility Ready to Equipment Ready is $10M to $40M per MW. Typical revenue at Facility Ready is $100 to $200 per kW per month and at Equipment Ready is $1000 to $2000 per kW per month.

Benefits

Situations we have helped resolve over the past two years illustrate the benefits of this framework, including:

- A PE firm decided to focus on taking data center projects from the Resource Ready stage to the Facility Ready stage. This helped them streamline the team skillset, finetune financial modeling, and improve project due diligence.
- A developer who purchased the assets of a manufacturing plant subsequently discovered that the included power purchase agreement would need a new environmental impact study to become operational after the transfer. Using the Resource Readiness checklist helped them catch this gap earlier.
- Another asset developer discovered during the Resource Readiness check that their water supply would need to be expanded with a new reservoir which would take 2-3 years to fill up, stretching their development schedule.
- A GPU system OEM decided to partner with an AI model orchestration software provider to qualify for the Equipment Ready stage.

Adopting the Sky Blue Asset Capability Ladder gives all stakeholders in AI data center development a common framework and vocabulary that reduces ambiguity and risk, aligns investment tranches and business models, and helps deliver capacity reliably, predictably, and rapidly.

About

Dr. Akash Deshpande, Principal at Sky Blue AI, develops and invests in AI infrastructure and technologies. He is Vice President of performance and efficiency at Cloudflare. He was Director at Google developing planet-scale technical infrastructure for Internet, Cloud, and AI/ML, CTO at Polycom leading advanced technology and products, Distinguished Engineer at Cisco reinventing Internet core routing, and Founder at Teja for high performance networks.

He received the B.Tech. in EE from IIT-Bombay and Ph.D. in EECS from UC-Berkeley. He taught at Berkeley where his breakthrough research became a VC-backed startup.

Dr. Deshpande is a technical advisor and LP at Aurum Equity Partners, Industry Expert and LP at Alumni Ventures, board member at Quantum Technology Systems, and technical advisor at SmartIOPs.