



TOGETHER LEARNING

Who Owns the Layer **Beneath** Everything Else?

Compute, artificial scarcity, and technological sovereignty in the AI era.

SWIPE →

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Microsoft's workforce reductions make more sense to me when viewed not simply as an AI automation story, but as a restructuring of where value is captured.

For decades, large technology companies made money by selling software to organizations that employed people to do the work. AI potentially changes that arrangement. The highest-value position may no longer be selling the application itself, but owning the compute, models, cloud infrastructure, identity systems, and data layers on which applications and increasingly entire organizations depend.

Applications · entire organizations

DEPEND ON ↓

The value position moves down a layer

Compute

Models

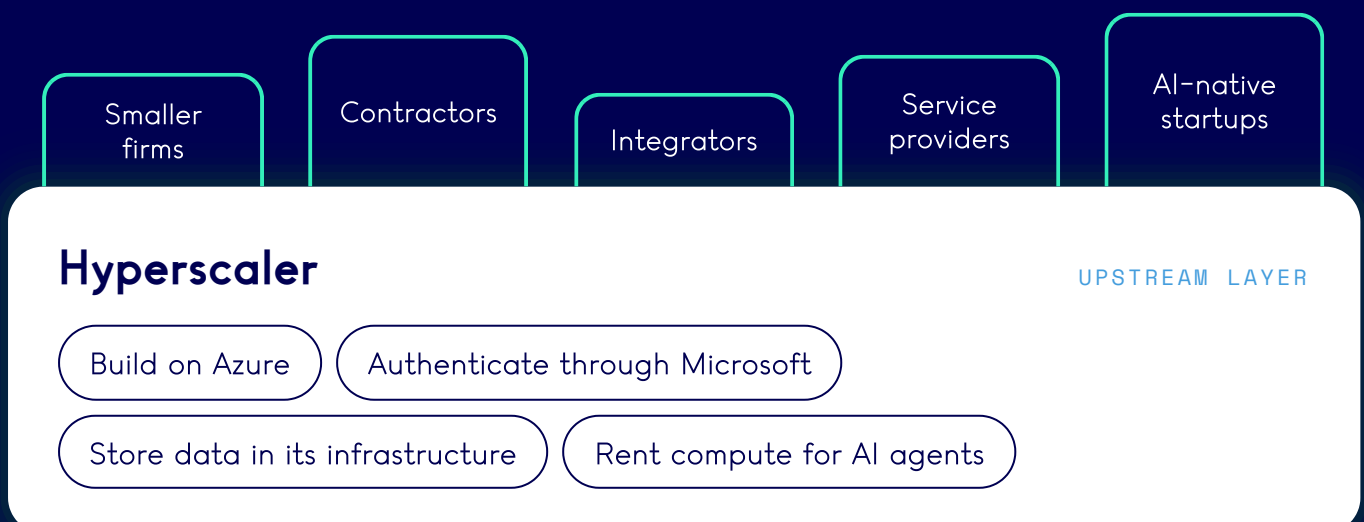
Cloud infrastructure

Identity systems

Data layers

In that model, much of the expensive, lower-margin human work can be pushed outward to what I think of as "remora companies": smaller firms, contractors, integrators, service providers, and AI-native startups that attach themselves to the infrastructure of the hyperscalers. They compete with one another on price and labor while the platform owner controls the layer upstream.

Microsoft does not need to build every application or employ everyone doing productive work. It needs organizations to build on Azure, authenticate through Microsoft systems, store data in its infrastructure, and increasingly rent the computational capacity required to operate AI agents.





If intelligence increasingly becomes something organizations rent rather than something people provide, control of compute becomes control of economic participation.



This is where the danger of artificial scarcity appears.

Digital goods should be capable of extraordinary abundance. Software can be copied almost without cost, and AI is rapidly reducing the cost of producing new software and knowledge work. Yet if access to the compute necessary to create that abundance is concentrated among a handful of companies, abundance at the application layer can coexist with scarcity at the infrastructure layer.

That scarcity does not need to be natural. It can be created through pricing, proprietary standards, data lock-in, closed ecosystems, restricted interoperability, and dependence on enormous capital-intensive computing systems.

Application layer

ABUNDANCE

Infrastructure layer

SCARCITY

a handful of companies

Pricing

Proprietary standards

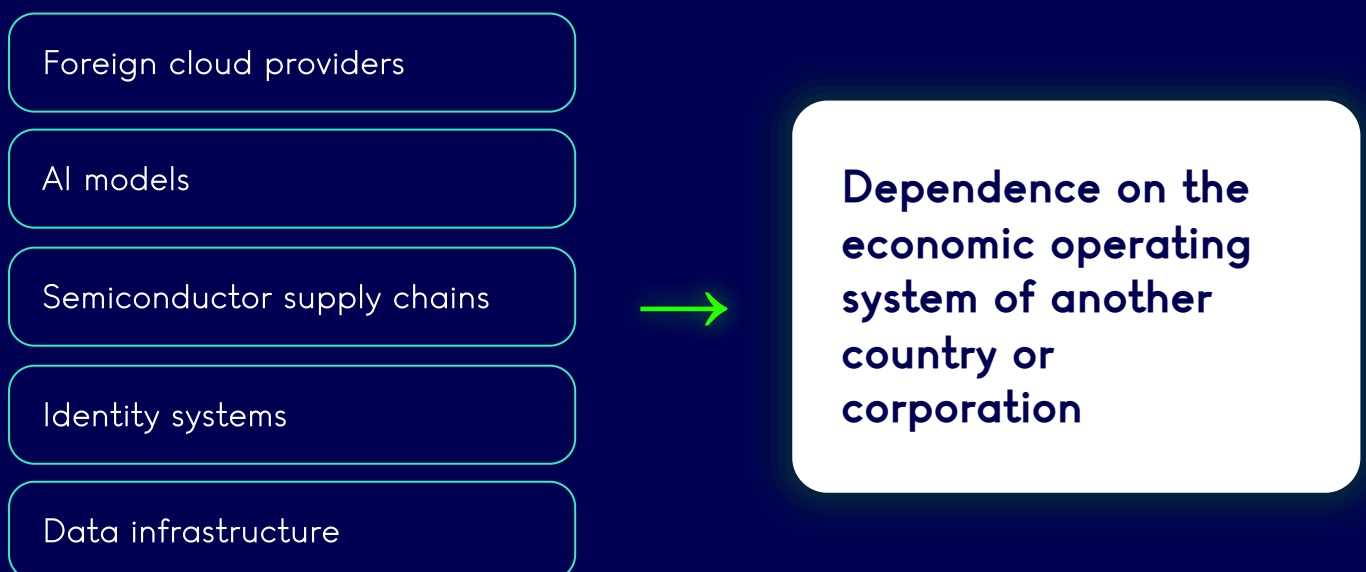
Data lock-in

Closed ecosystems

Restricted interoperability

Capital-intensive computing

Seen this way, the growing interest in "digital sovereignty" is not simply nationalism applied to technology. Governments are beginning to recognize that dependence on foreign cloud providers, AI models, semiconductor supply chains, identity systems, and data infrastructure can become dependence on the economic operating system of another country or corporation.



There is also a more hopeful path: open-source and open-weight models that can run locally on devices we actually own. That could reduce dependence on centralized compute and give individuals, schools, and communities more control over their data, tools, and digital agency.

But even that future depends on whether we are still allowed to meaningfully own and modify our devices. Right to Repair, bootloader access, interoperability, local processing, and the ability to install our own software are not side issues. They are part of the same larger question of technological sovereignty.

The strategic question of the AI era may therefore be less about who builds the best chatbot and more about who owns the computational layer beneath everything else.



That is why public compute, interoperability, open standards, local AI, device ownership, and distributed ownership matter. Without them, we risk using a technology capable of creating unprecedented abundance to build another system of artificial scarcity.

01

Public compute

02

Interoperability

03

Open standards

04

Local AI

05

Device ownership

06

Distributed ownership



And whoever controls
that scarcity **controls**
the funnel.

I am trying to do my small part by bringing these questions directly into my Digital Citizenship coursework at Kyoto University of Foreign Studies and Doshisha University. I want students to see digital citizenship not just as responsible technology use, but as the ability to recognize who controls the infrastructure, where dependencies are being created, what rights they retain over their own devices and data, and what kinds of technological futures we are collectively choosing.

WHO

controls the infrastructure

WHERE

**dependencies are being
created**

WHAT RIGHTS

**they retain over their own
devices and data**

WHAT FUTURES

we are collectively choosing

ABOUT THE AUTHOR

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Eric is a learning futurist, tinkering with and designing technologies that may better inform the future of teaching and learning. Eric's projects have included augmented tourism rallies, AR community art exhibitions, mixed reality escape rooms, and other experiments in immersive technology.



Roles

Professor – Kyoto University of Foreign Studies
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Developer – Reality Labo
Community Leader – Team Teachers
Chair – World Learning Labs

CORE VALUES

- **Open Knowledge** - Free and open access to information is a foundation to a productive modern life, connected to ideas of the open web and platform agnosticism.
- **Privacy by Design** - Business models are increasing moving toward supporting revenue by collecting, curating, and trading behavioral surplus through technology. These models should be tempered with safety, ethics, and privacy concerns and designed as such.
- **Digital Literacy for All** - An informed public about the use of technology is key for a responsible and engaged digital society.

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SCAN

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