WHY OPEN INFRASTRUCTURE MATTERS

HELLO!

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I am tcarrez on Twitter

And ttx on Freenode IRC

0.
A PARADOX

Is free software really free

DEVELOPMENT INFRASTRUCTURE

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- Proprietary operating systems (OS/X)

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- Proprietary operating systems (OS/X)
- Proprietary services (GitHub)
- “Free software needs free tools” (Benjamin Mako Hill)


RUNTIME
INFRASTRUCTURE

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- Proprietary services (Amazon Web Services)

RUNTIME INFRASTRUCTURE

- Proprietary services (Amazon Web Services)
- Open infrastructure

1. INFRASTRUCTURE

Application deployers want programmable infrastructure

PILING UP ABSTRACTIONS

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Market pressure

Commoditizing
the lower layers

PILING UP ABSTRACTIONS

Market pressure

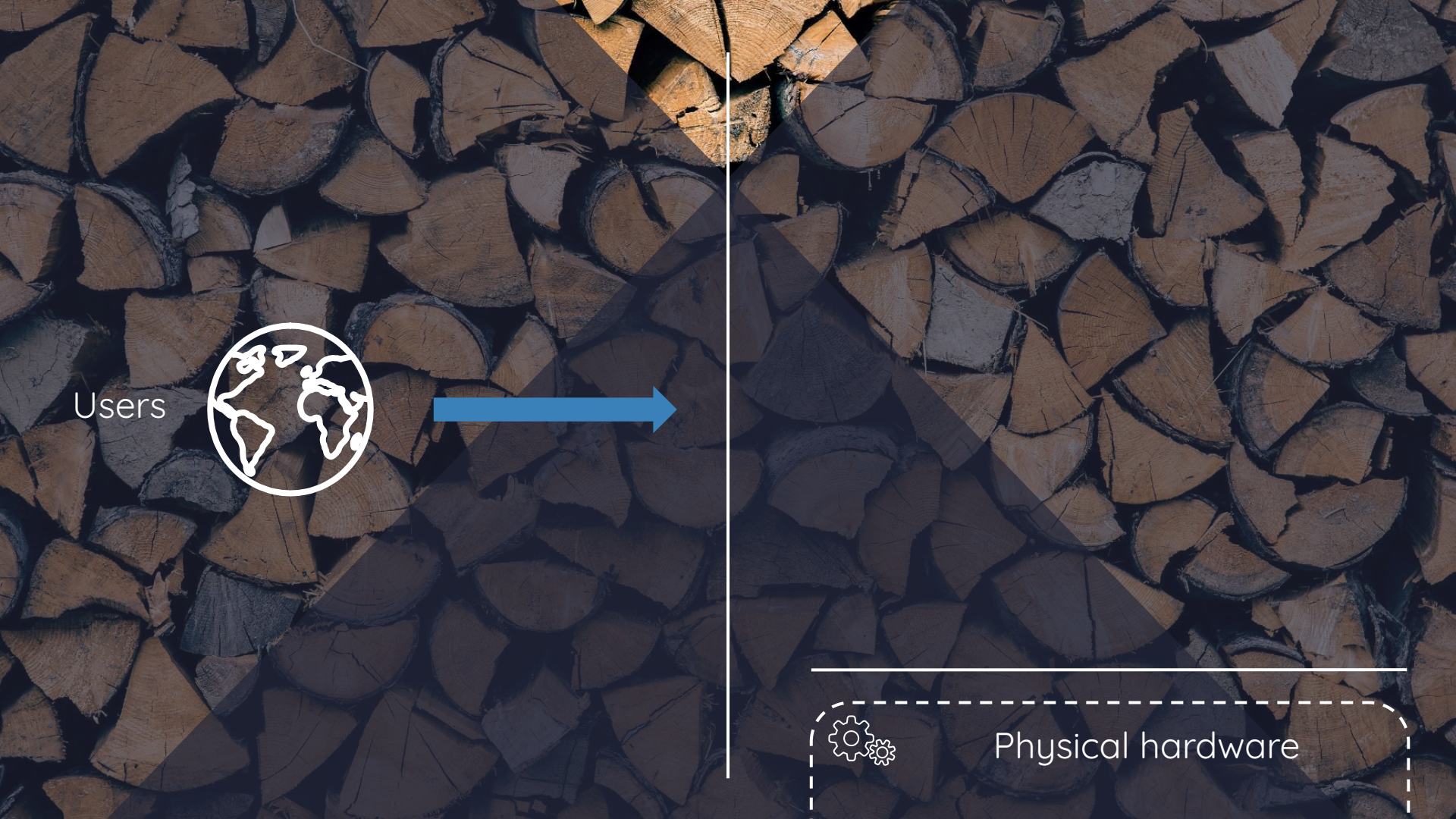
Commoditizing the lower layers

Developers pressure

Abstracting differences between lower layers

Users

Applications


Users
Physical hardware

Users

Application
developers
& deployers

Physical hardware

Users

Application developers & deployers

Hardware virtualization

Physical hardware

Users

Application developers & deployers

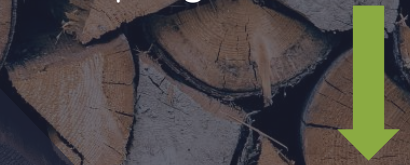
IaaS APIs

Hardware virtualization

Physical hardware

Users

Application developers & deployers



Application deployment APIs

IaaS APIs

Hardware virtualization

Physical hardware

INFRASTRUCTURE EVOLUTION

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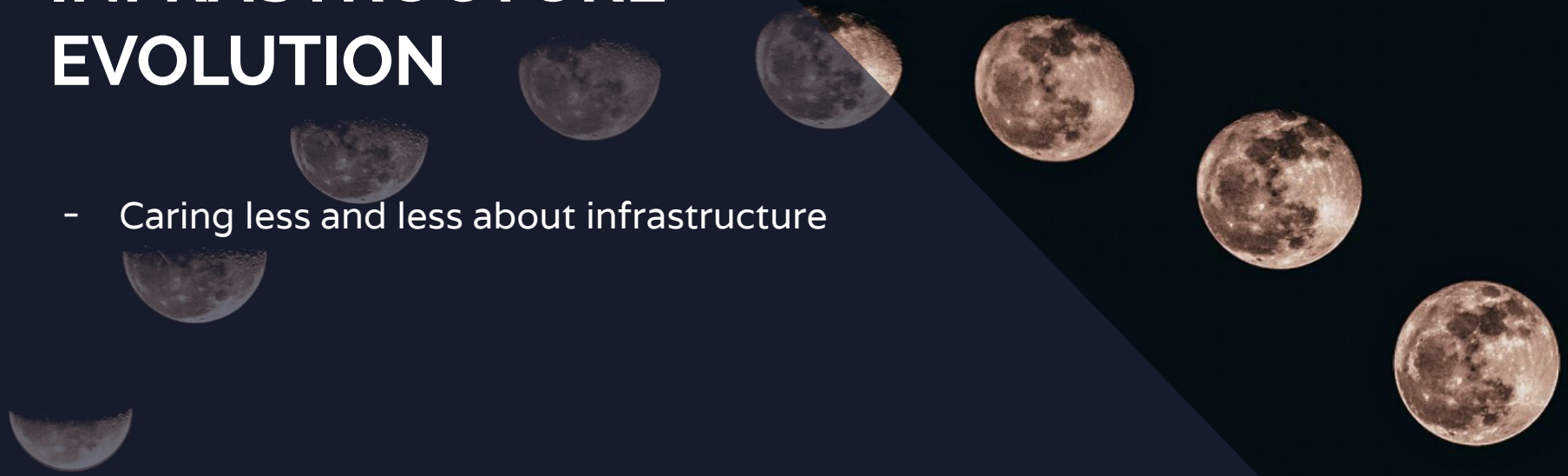
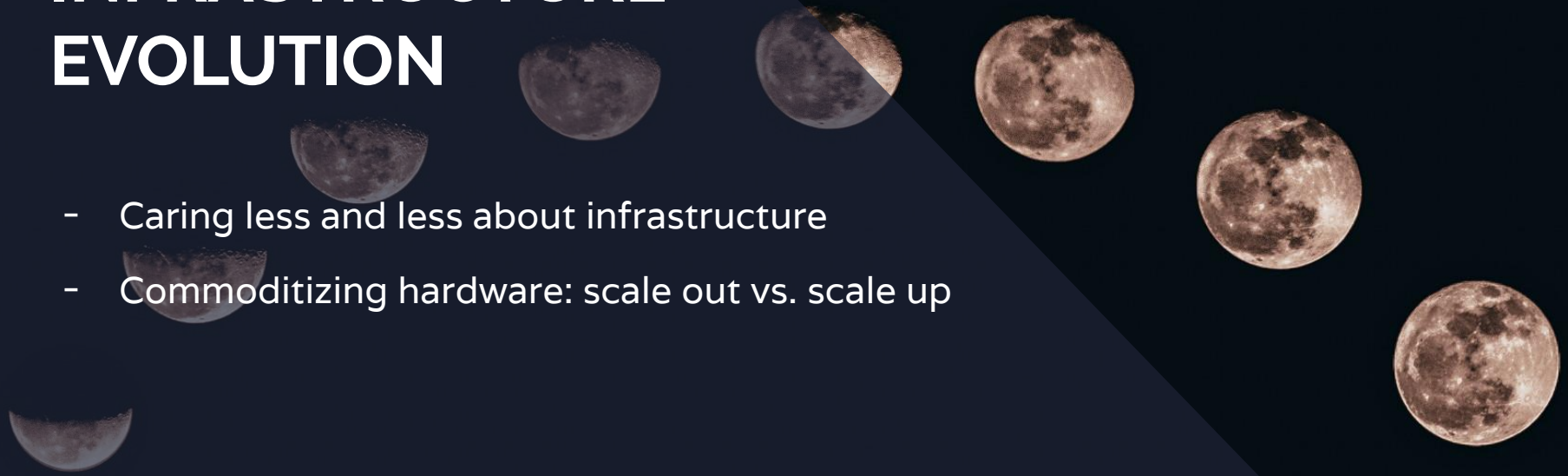
- Caring less and less about infrastructure



INFRASTRUCTURE EVOLUTION



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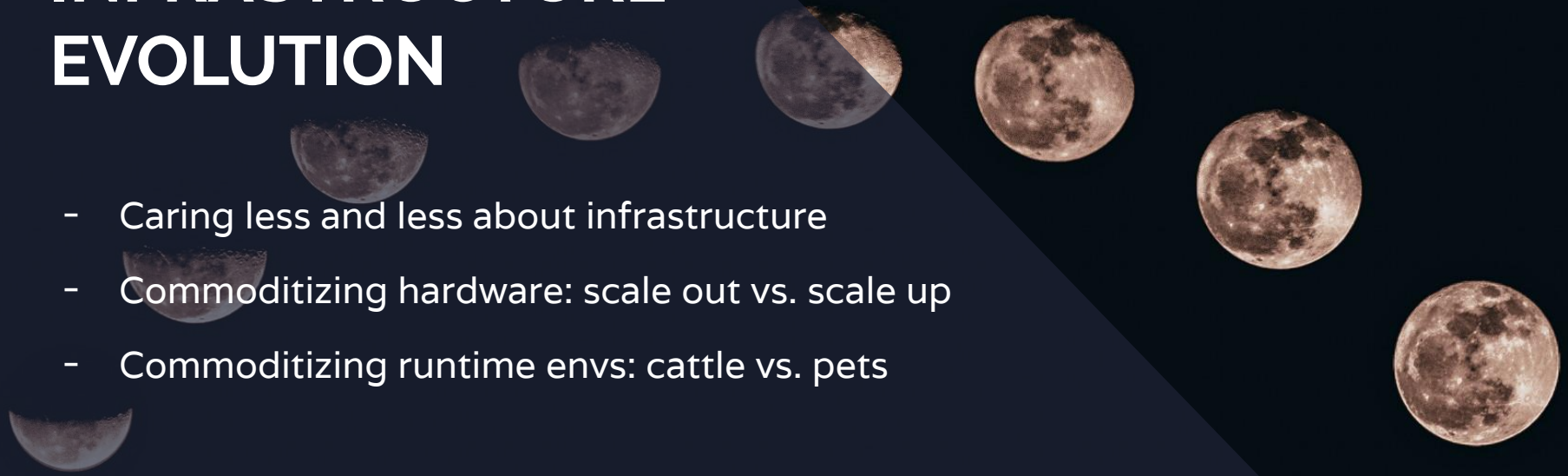
- Commoditizing hardware: scale out vs. scale up

INFRASTRUCTURE EVOLUTION



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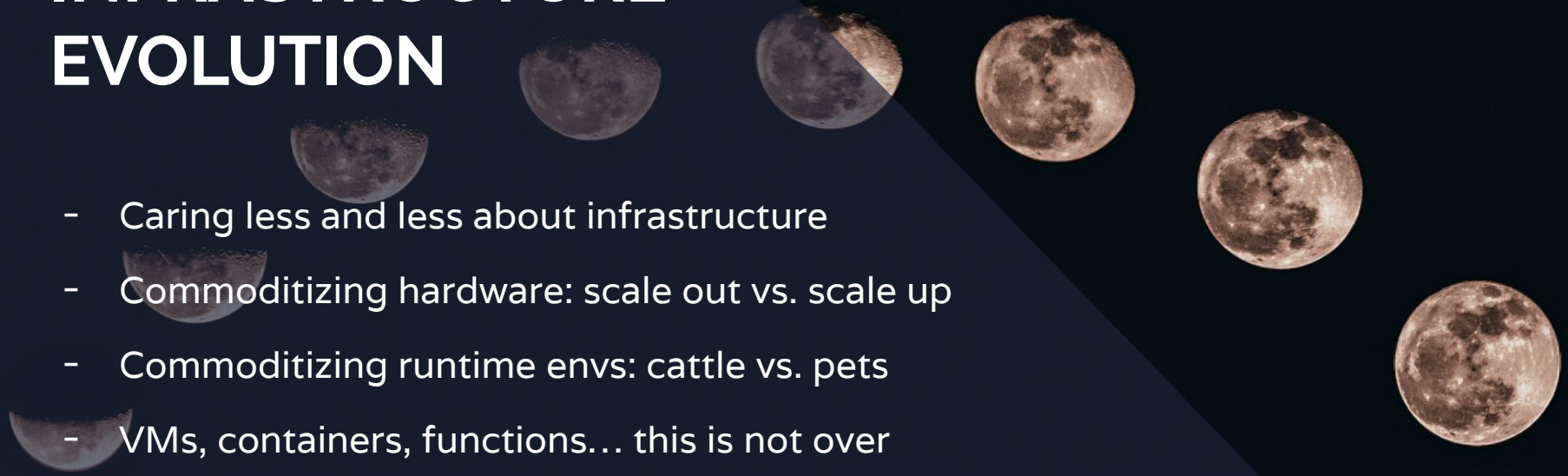
INFRASTRUCTURE EVOLUTION



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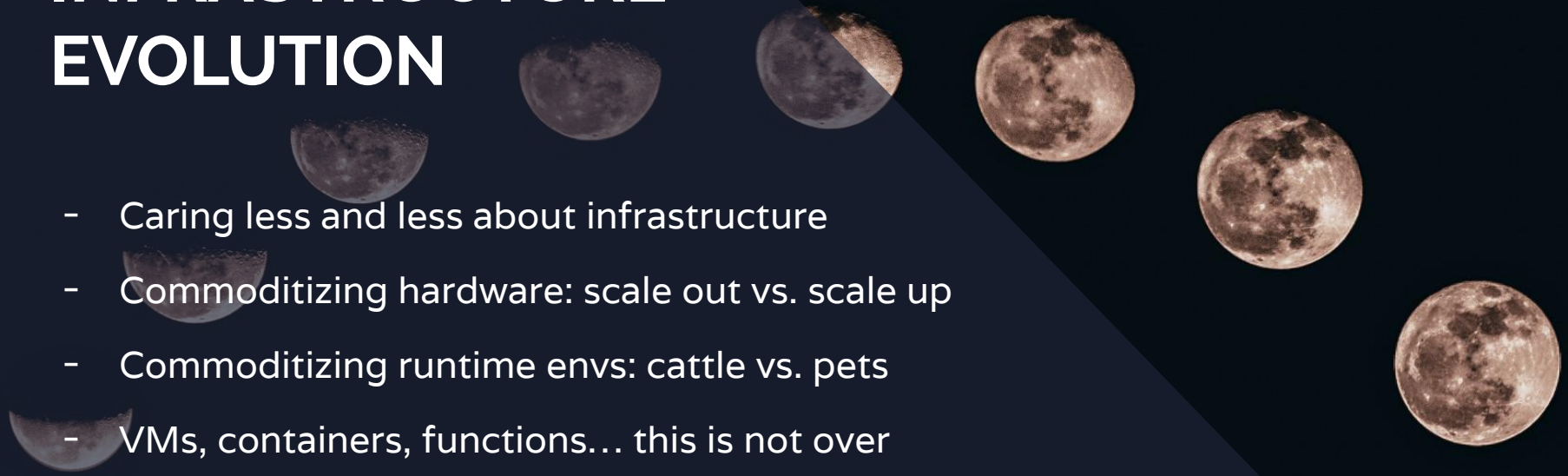
- VMs, containers, functions… this is not over

INFRASTRUCTURE EVOLUTION



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- Commoditizing hardware: scale out vs. scale up
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- VMs, containers, functions… this is not over
- More software, less hardware

Users

Application
developers
& deployers

Physical hardware

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IaaS APIs

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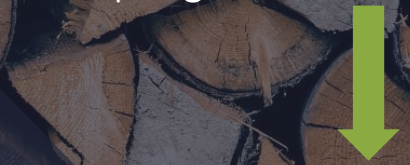

Application deployment APIs

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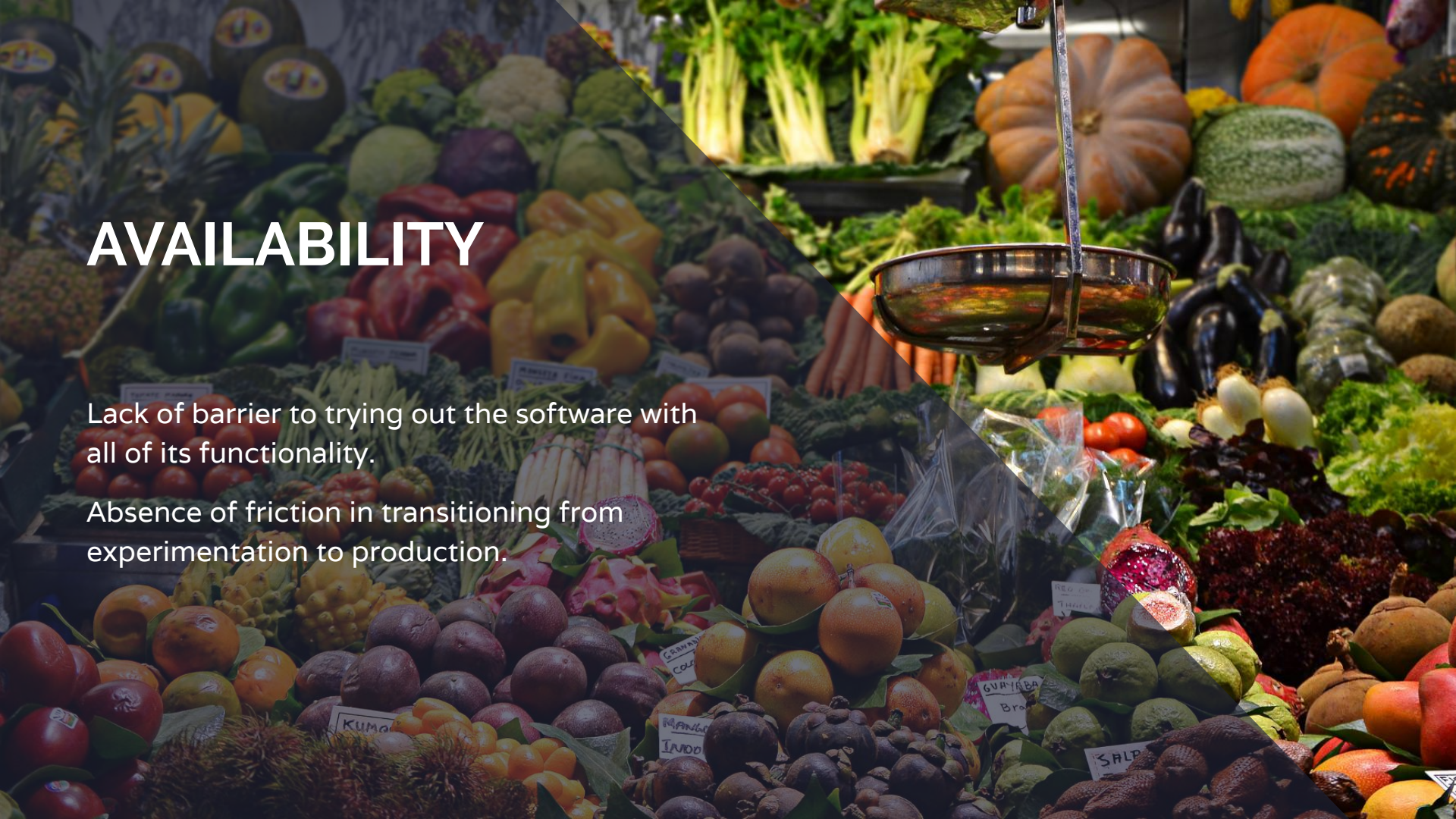
Infrastructure providers


Infrastructure
providers

2.
OPEN

Providing infrastructure using open source components



AVAILABILITY

Lack of barrier to trying out the software with all of its functionality.

Absence of friction in transitioning from experimentation to production.

SUSTAINABILITY

Existence of a multi-vendor market able to provide maintenance services over the software, making the choice of a given organization to use the software less dependent on the health of the software vendor, and limiting the risk of lock-in.

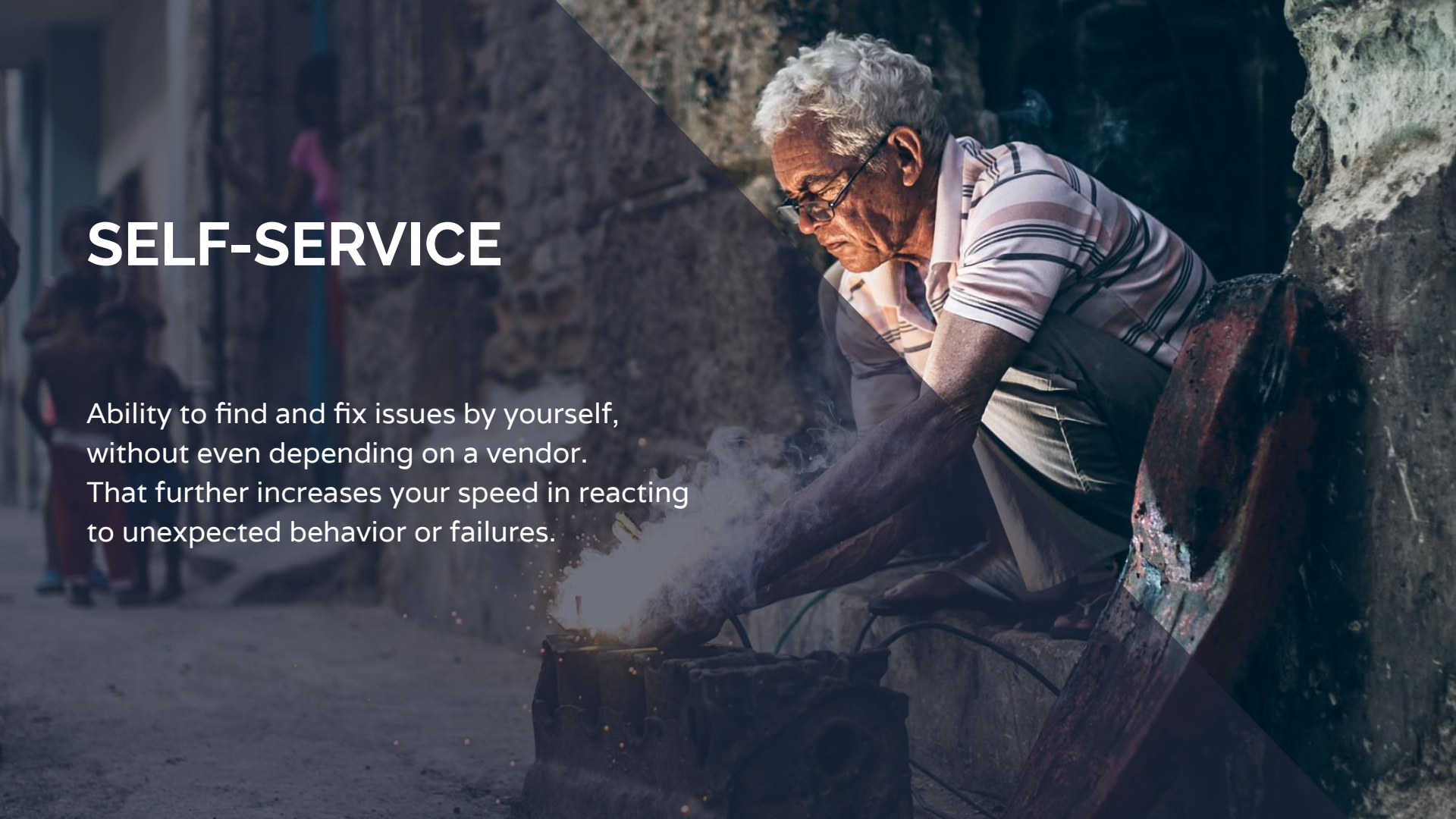
FLUID JOB MARKET

Easy identification of potential recruits based on the open record of their contributions to the technology they are interested in.

Easily evaluation of recruiting organizations based on the open source technologies they are using.

TRANSPARENCY

Ability to look under the hood and understand how the software works, or why it behaves the way it does. Increases your speed in reacting to unexpected behavior or failures.



SELF-SERVICE

Ability to find and fix issues by yourself,
without even depending on a vendor.
That further increases your speed in reacting
to unexpected behavior or failures.

INFLUENCEABILITY

Possibility to engage in the community developing the software, and to influence its direction by contributing directly to it.

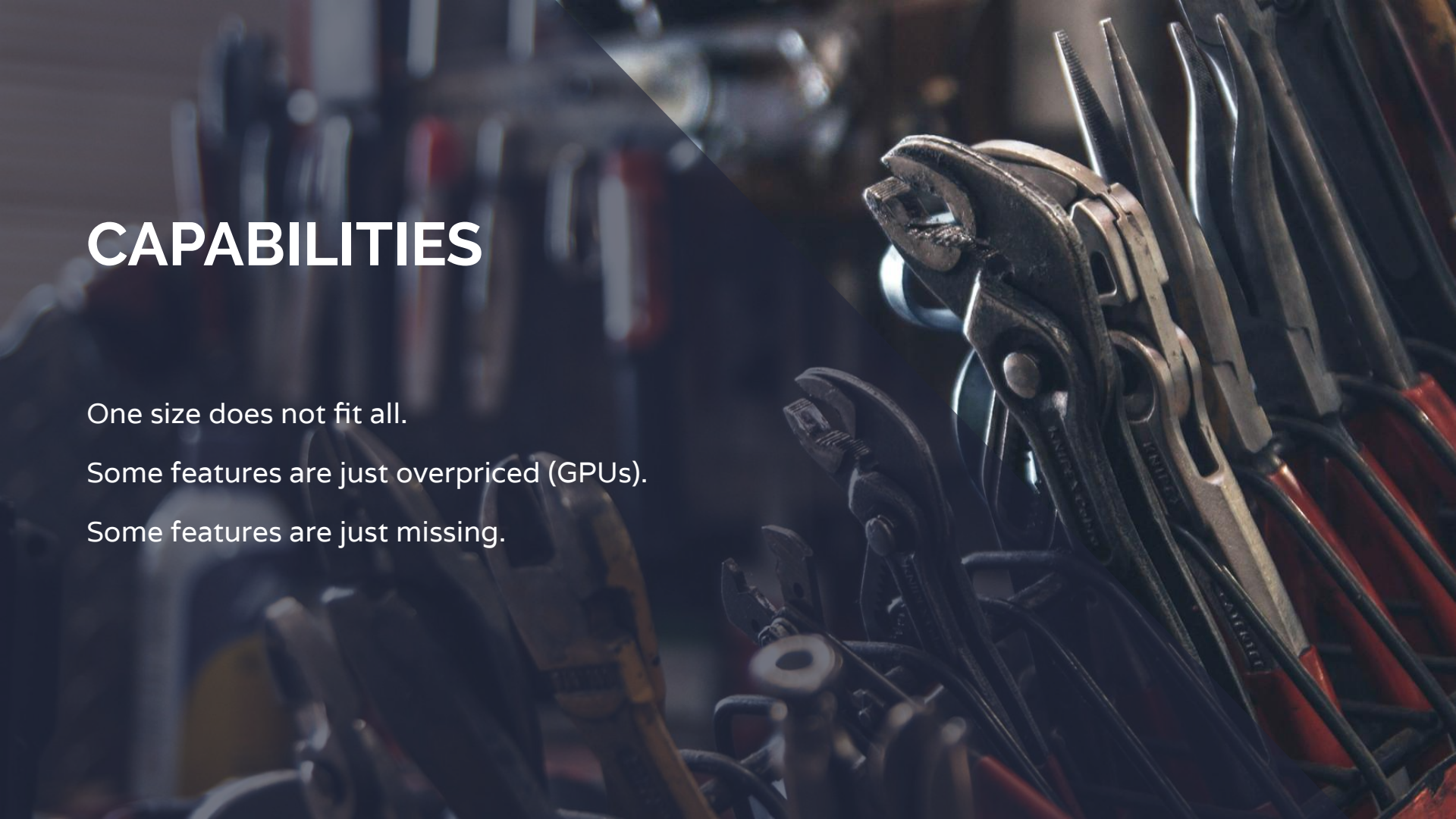
Organizations that engage in the open source communities can make sure the software adapts to future needs by growing the features they will need tomorrow.

OPEN SOURCE BENEFITS

- Availability
- Sustainability
- Fluid job market
- Transparency
- Self-service
- Influenceability

3.
THE THREE Cs

Capabilities, Compliance and Cost



CAPABILITIES

One size does not fit all.

Some features are just overpriced (GPUs).

Some features are just missing.

COMPLIANCE

Legal requirements around data locality.

Confidentiality around strategic companies.

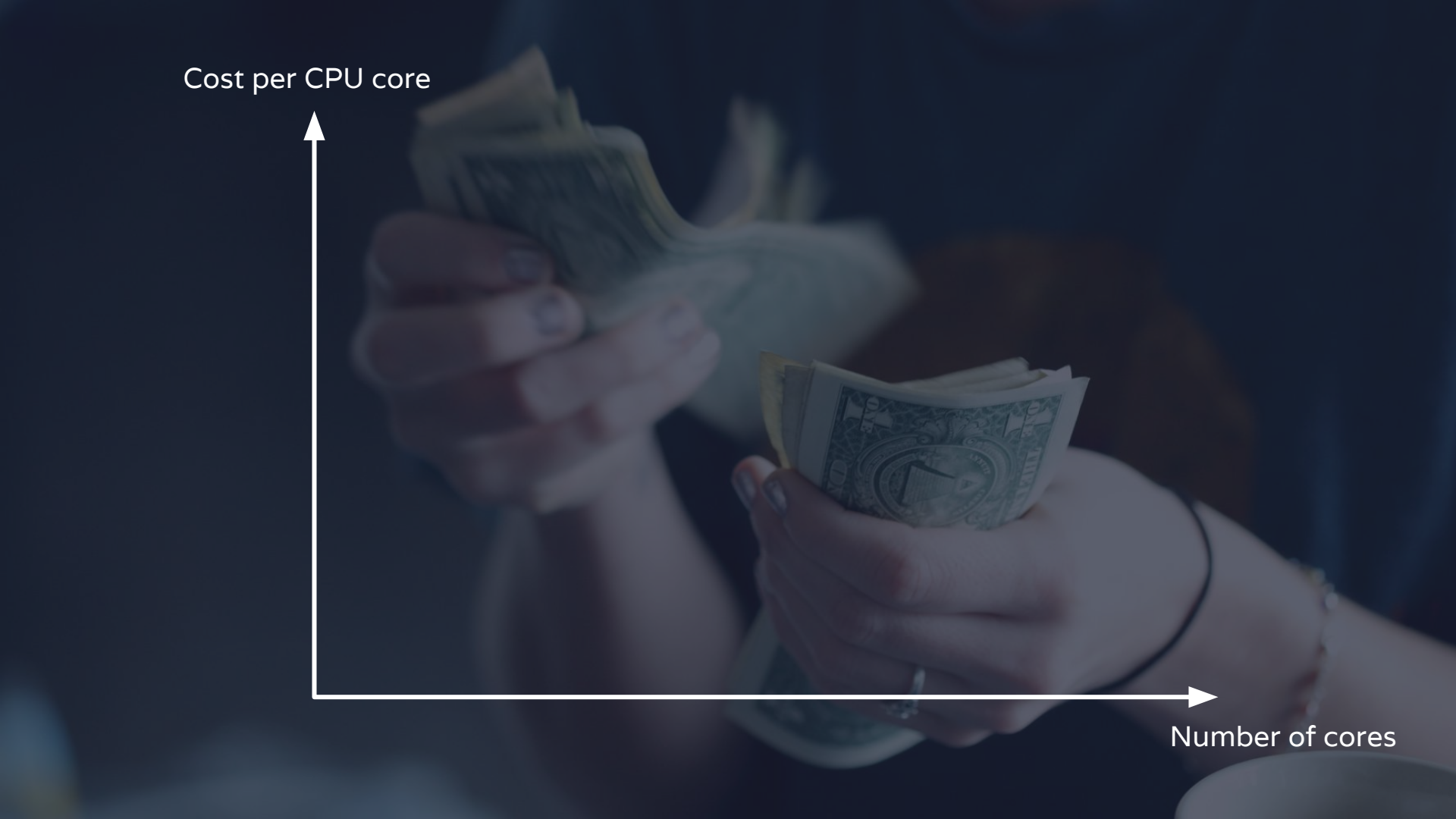
COST

If you are interested by private infrastructure,
open infrastructure will keep the price low.

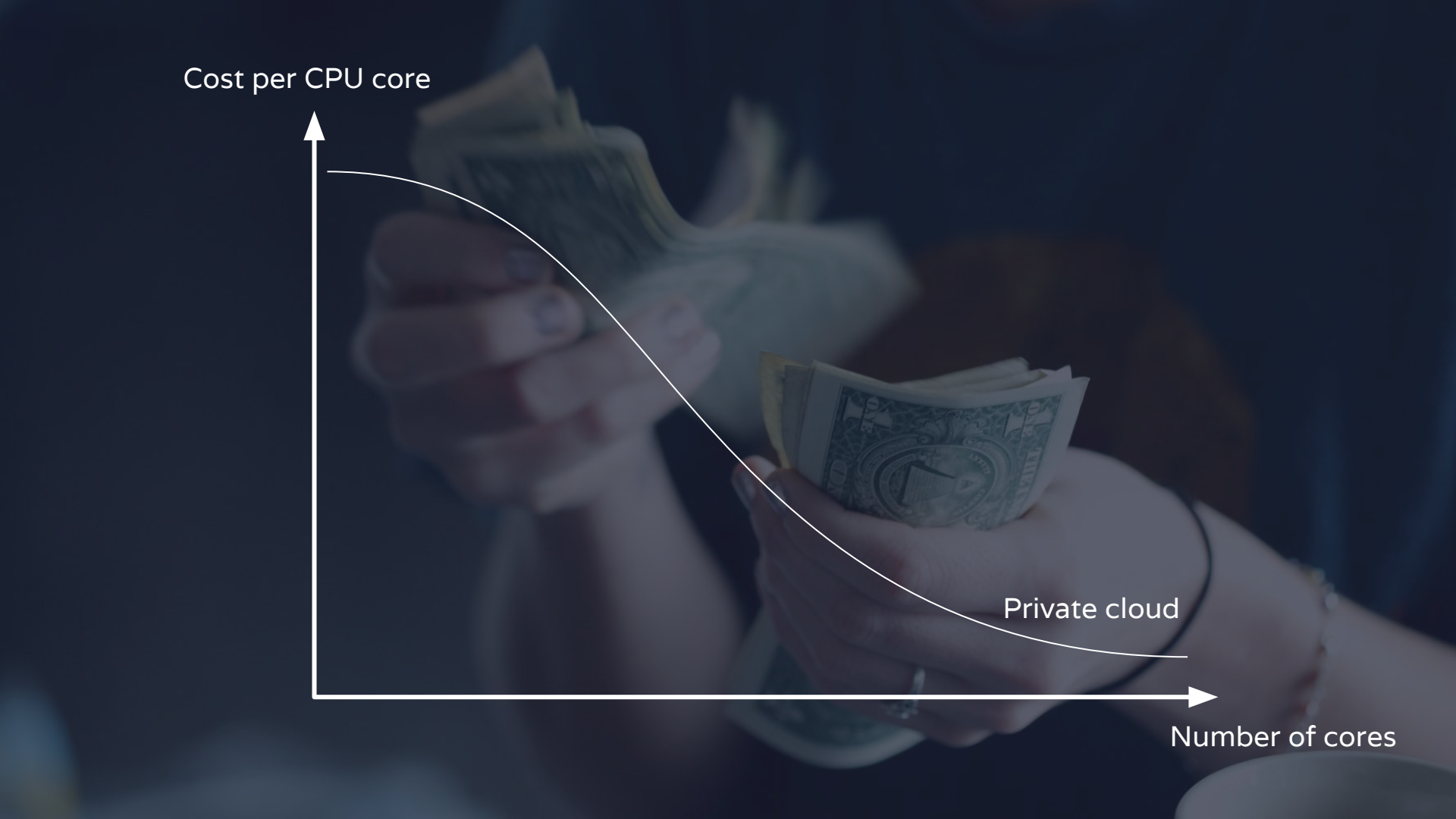
And if you want to provide public infrastructure,
you should not start from scratch.

4. INTEROPERABILITY

Facilitating hybrid cloud scenarios


Cost per CPU core
Number of cores


Cost per CPU core
Public cloud pricing
Number of cores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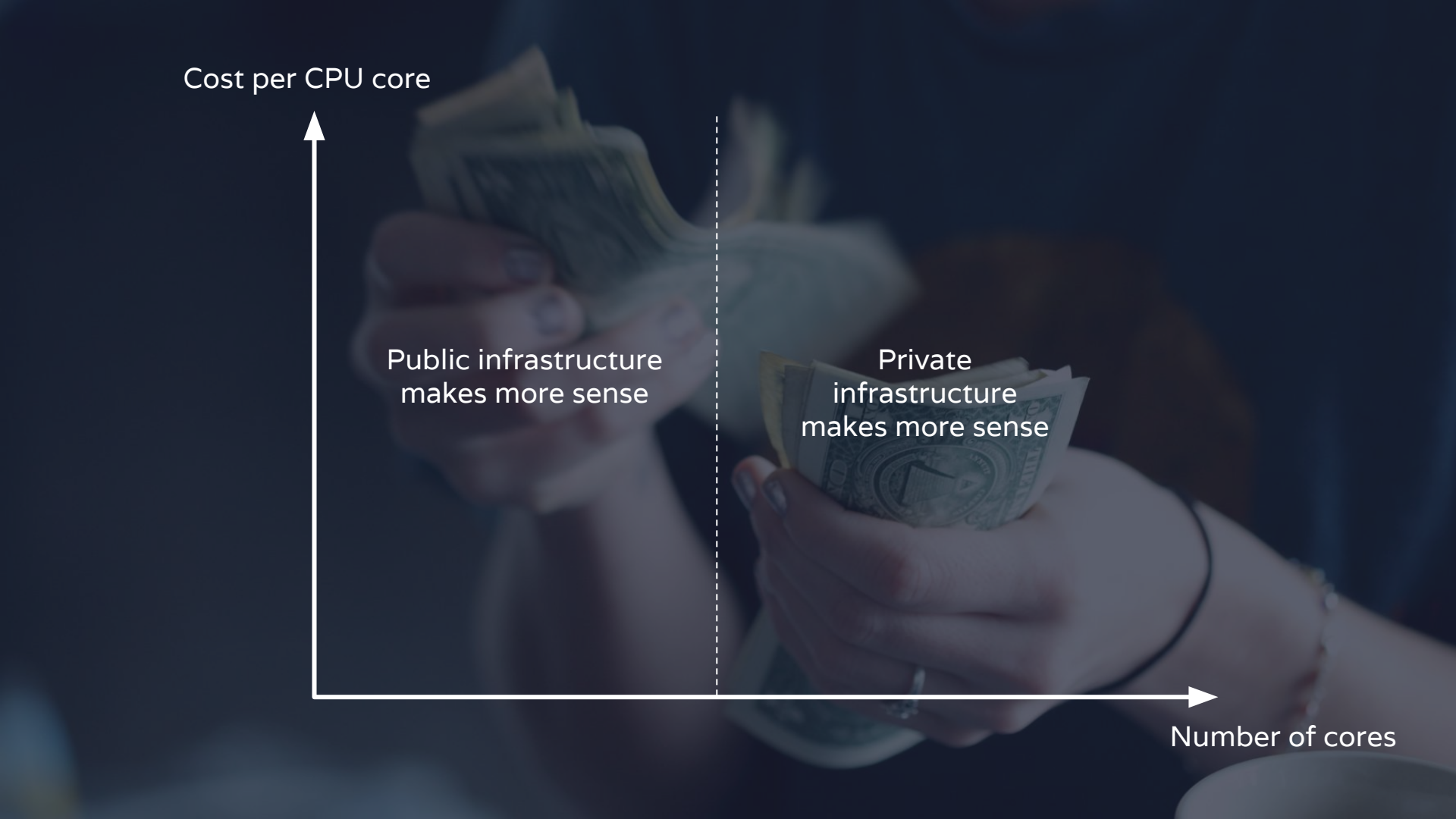
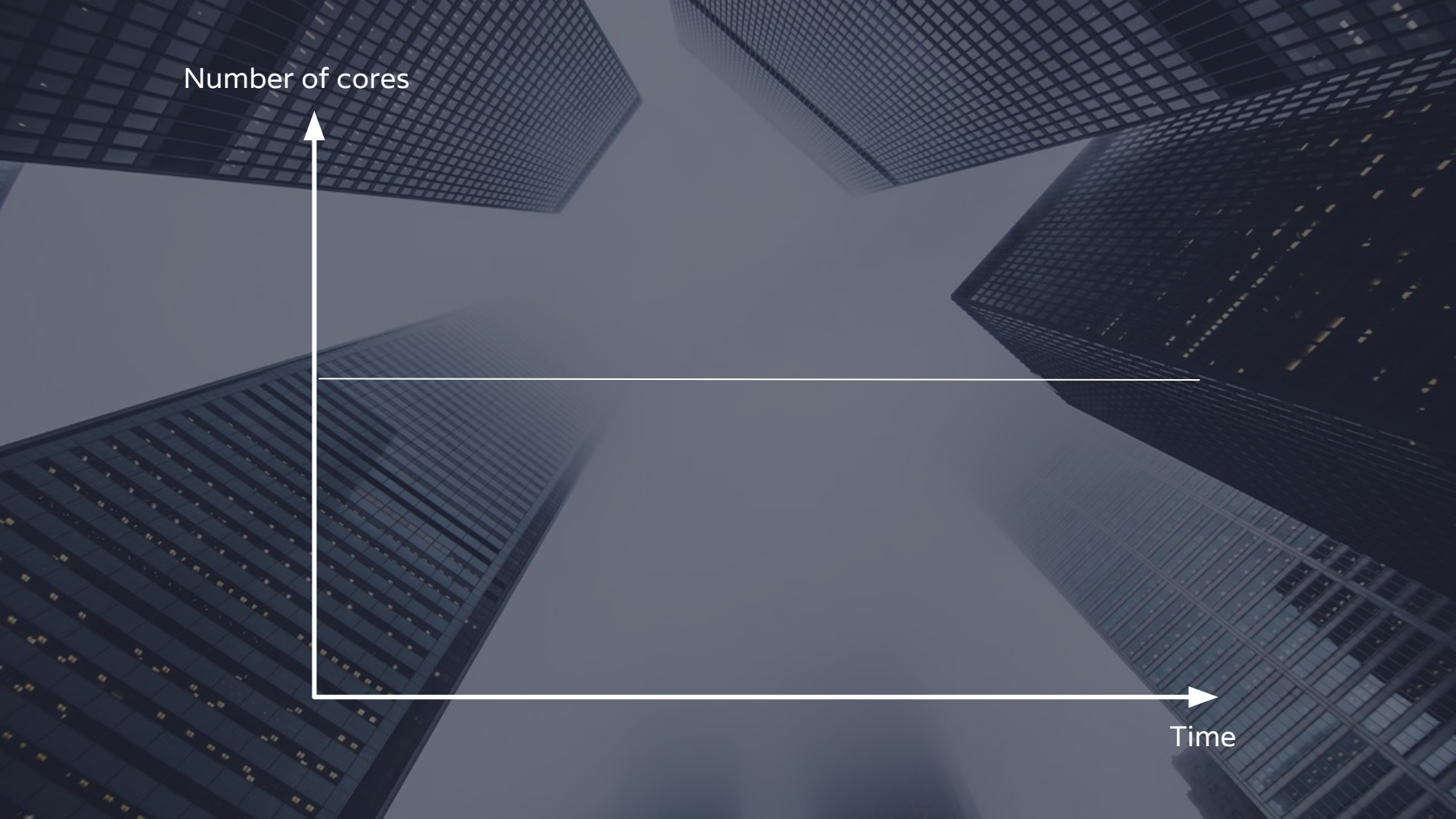
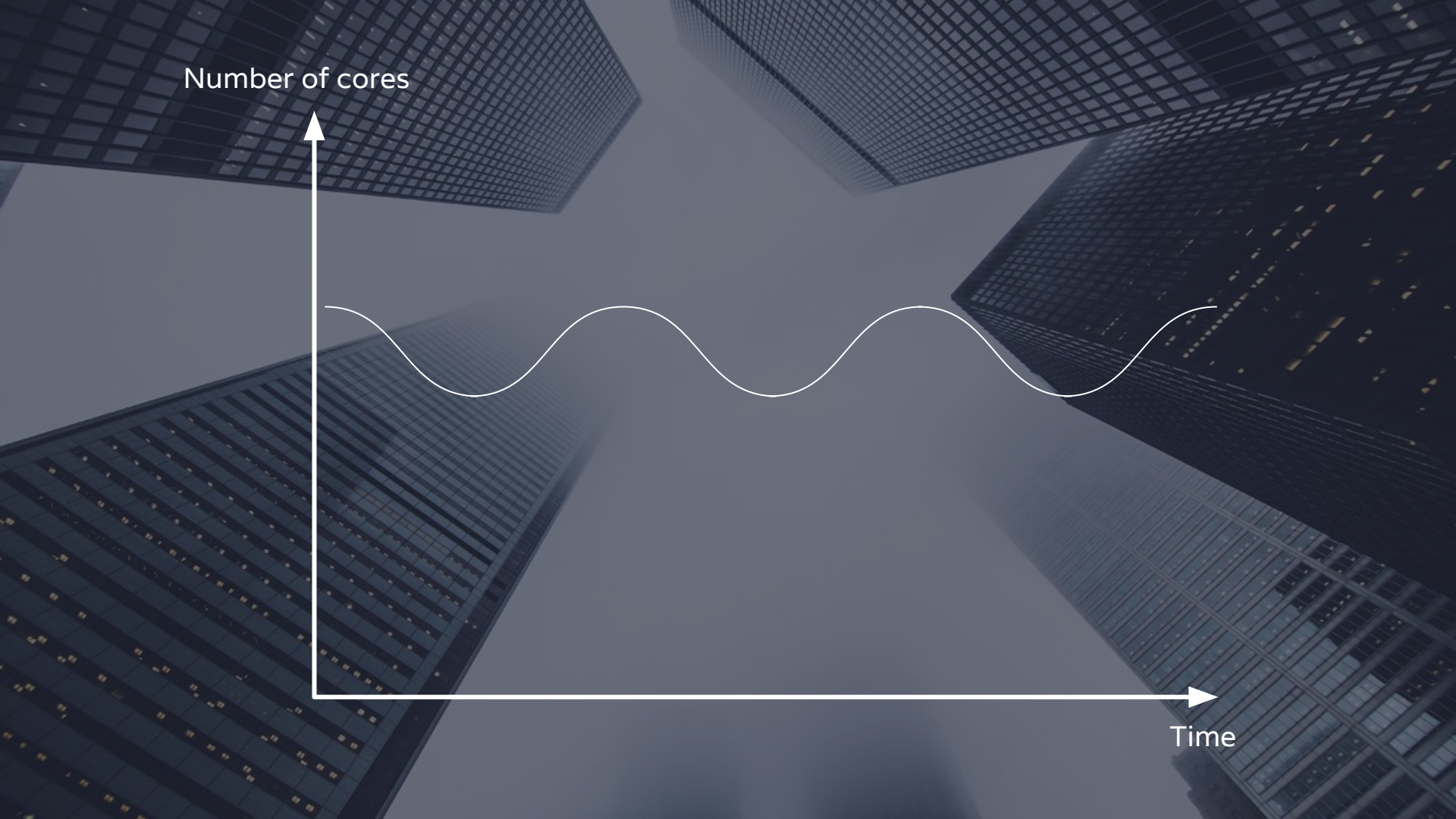

Cost per CPU core
Public infrastructure makes more sense
Private infrastructure makes more sense
Number of cores


Number of cores
Time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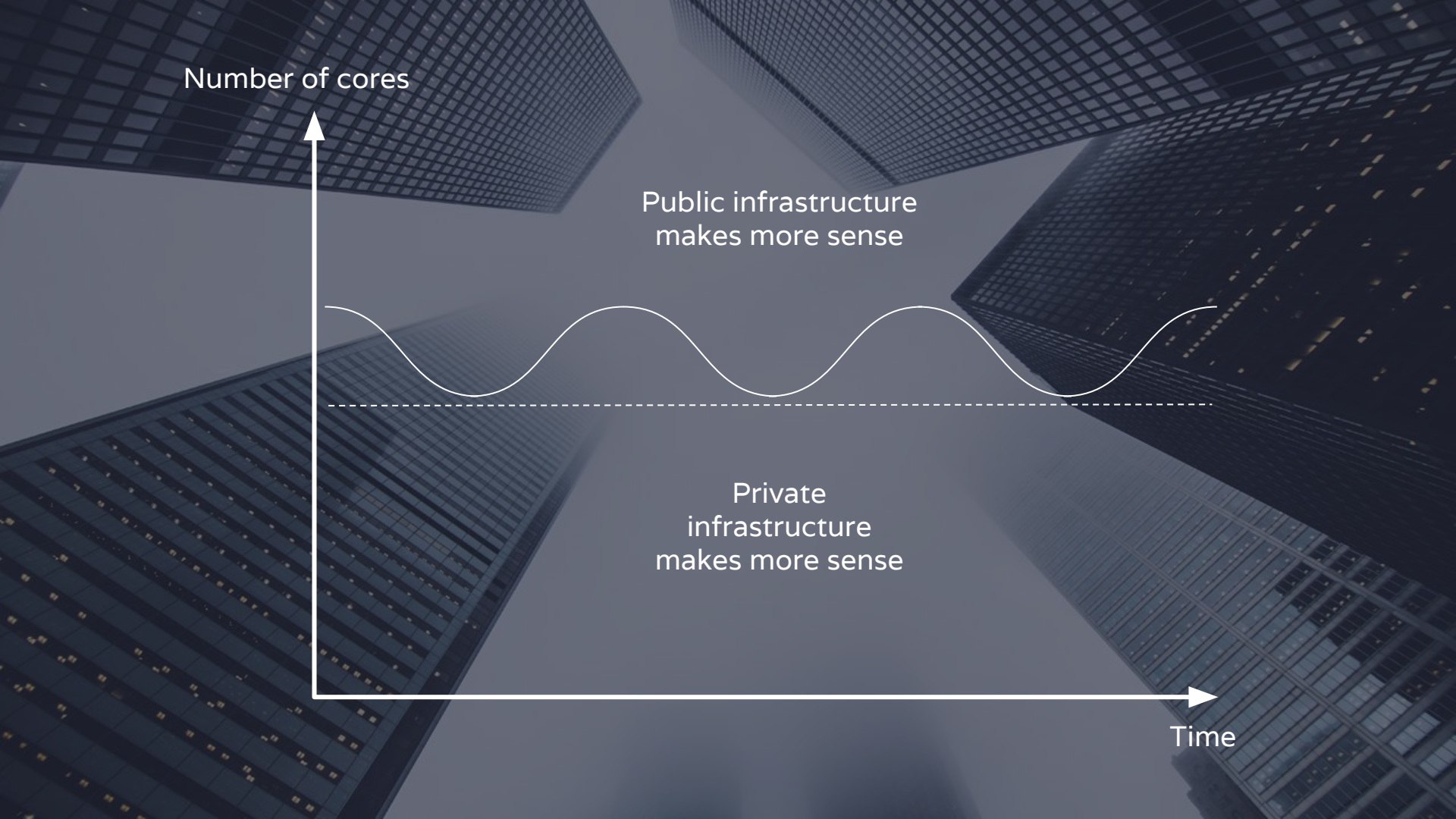
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HYBRID, INTEROPERABLE INFRASTRUCTURE

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- Hybrid clouds allow to optimize cost
- Hybrid clouds enable capabilities & compliance
- Interoperable public & private clouds reduce applications cost


INTEROPERABILITY
IN OPEN INFRA

INTEROPERABILITY IN OPEN INFRA

OpenStack

Promises interoperability at the infrastructure layer

INTEROPERABILITY IN OPEN INFRA

OpenStack

Promises interoperability at the infrastructure layer

Kubernetes

Promises interoperability at the app deployment layer

5.
FUTURE-PROOF

Investing in communities rather than in products


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- Abstractions will continue to be piled
- There is no miracle technology that will end all technologies
- There will always be applications and infrastructure


BE FUTURE-PROOF

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- Open source allows to invest in communities, rather than products

BE FUTURE-PROOF

- Open source allows to invest in communities, rather than products
- OpenStack community takes the angle of the infrastructure provider, and helps them build and operate open source solutions for infrastructure

SO... WHY CHOOSE OPEN INFRA ?

- Availability
- Sustainability
- Fluid job market
- Transparency
- Self-service
- Influenceability
- Compliance
- Capabilities
- Cost
- Interoperability
- Enabling hybrid usage
- Future-proof

6.
ENABLE INNOVATION

Creating ideal conditions for innovation everywhere

AVOID MONOPOLIES

It is not economically sane to have all of the world's infrastructure needs being provided by a couple of Internet giant companies.

AVOID MONOCULTURES

It is not safe to have all of the worlds infrastructure needs being provided by a couple of Internet giants

ENABLE EVERYONE

Giving everyone access to infrastructure providing technologies makes sure that we maximize innovation in the world.

THANKS!

Any questions?

Shy?
You can reach me at @tcarrez on Twitter
Or email me at thierry@openstack.org

Credits