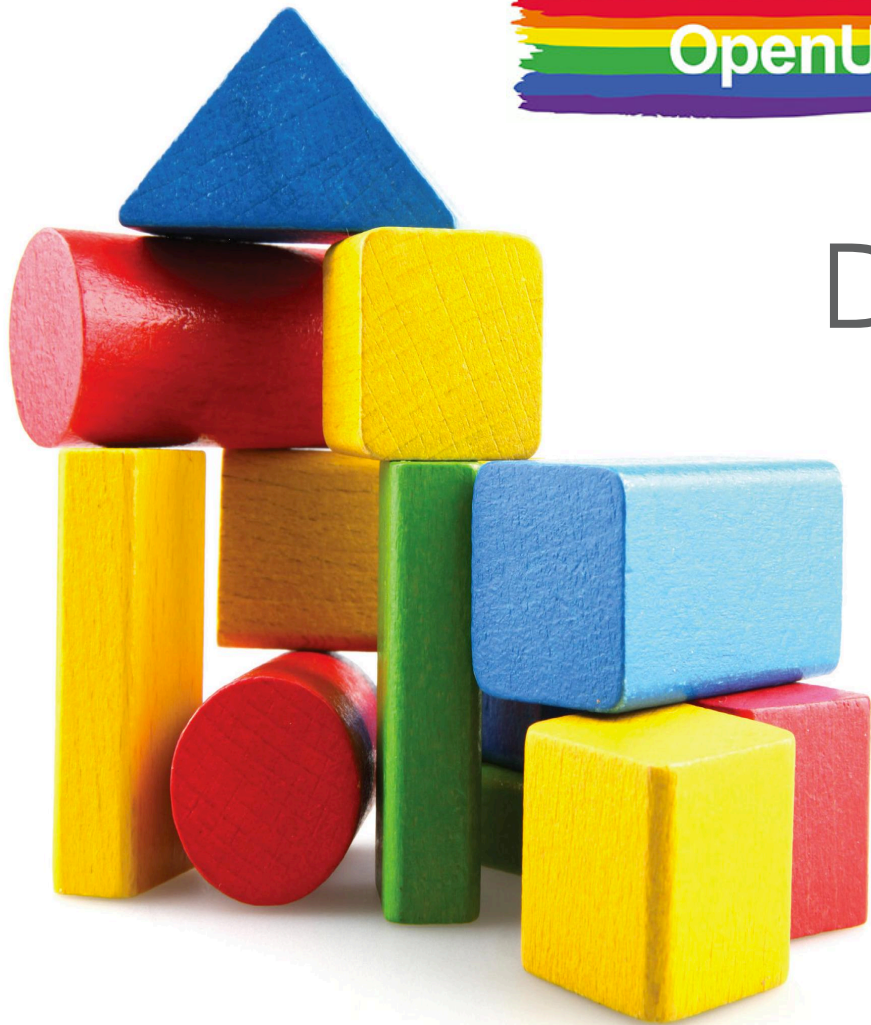




# Disaggregation



**OPEN**  
Compute Project

July 17, 2020



# OEM

(Original Equipment Manufacturer)

Buys platform components  
from the manufacturer

Resells those components  
under their own brand name

Create products that can server  
the broadest possible market

Support and managed  
services

# ODM/White Box

(Original Design Manufacturer or White Box)

Manufactures platform  
components

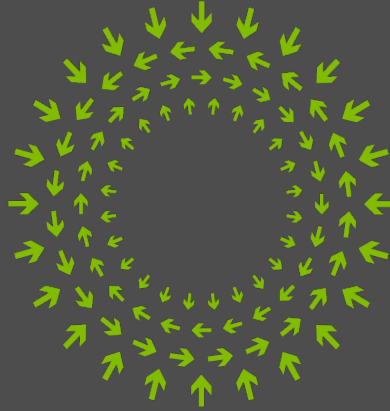
Provide full product  
development services

Can manufacture  
specialised solutions

Support centred on  
product

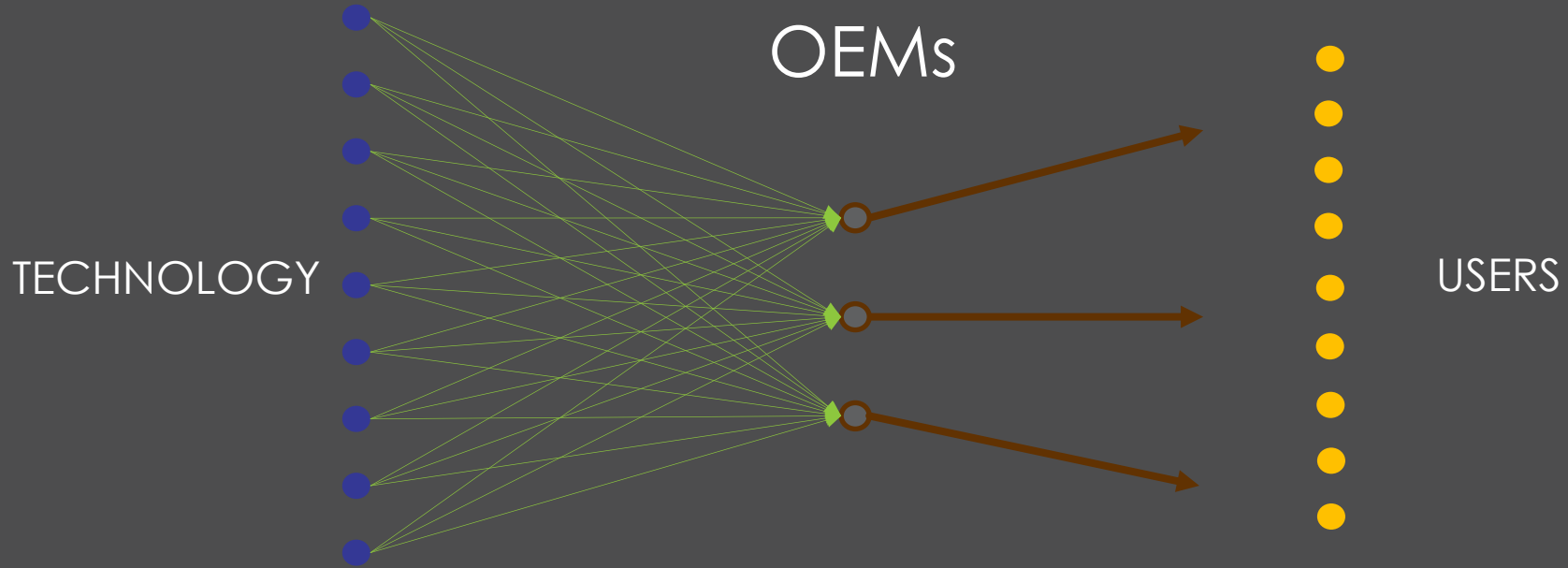


# ODM/White Box + Open Source



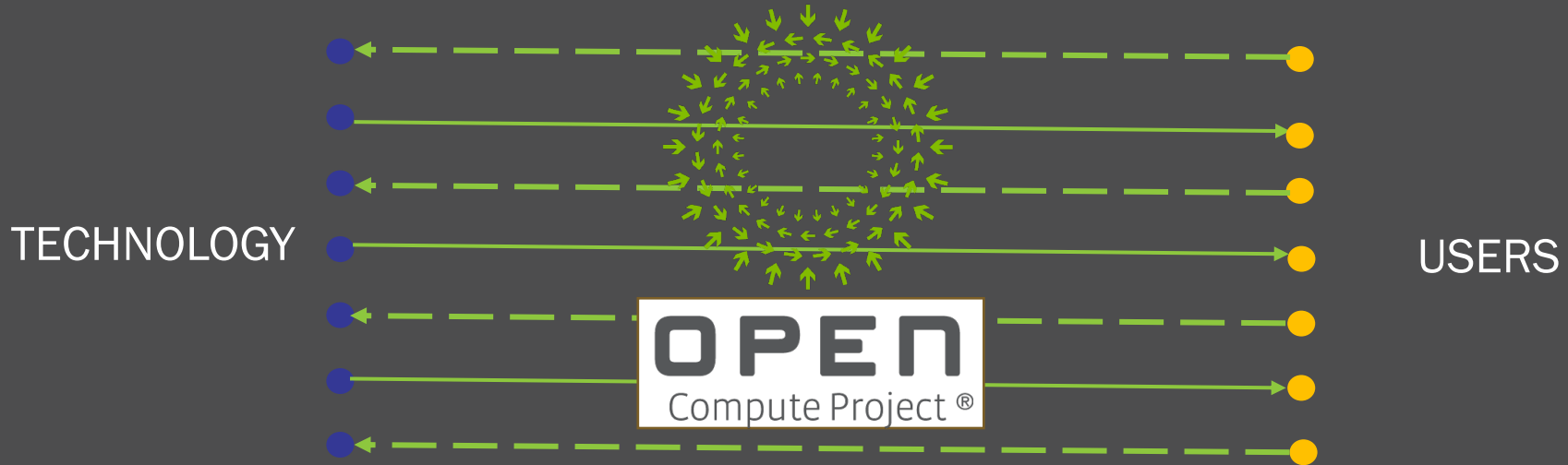


# The old innovation pipeline





# “Creative Destruction”







COMPANIES > FACEBOOK

## Facebook to Build Its Own Data Centers

Facebook has decided to begin building its own data centers, and may announce its first facility as soon as tomorrow. The fast-growing social network has previously leased server space from wholesale data center providers.

Rich Miller | Jan 20, 2010



What can we remove from the system?

Can we raise operating temperatures and have the servers survive?

Can we increase relative humidity operational ranges to make the system much more efficient?

Do we need a centralized power supplies?





# Open Compute Project

A collaborative community focused on redesigning hardware technology to efficiently support the growing demands on compute infrastructure.







150+ companies  
6K engineers  
189 contributions



# Our Projects



Networking



Server



Storage



Rack & Power



Advanced Cooling



Data Center



Modular DC



Telco



openEDGE



HW Mgmt



Open  
System  
Firmware



HPC



Security





Efficiency



Scale

Impact

Openness







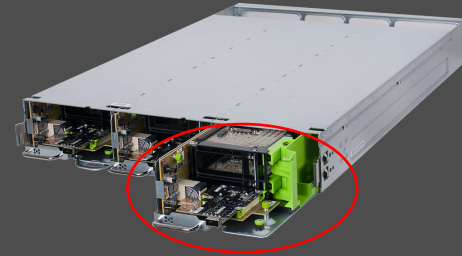
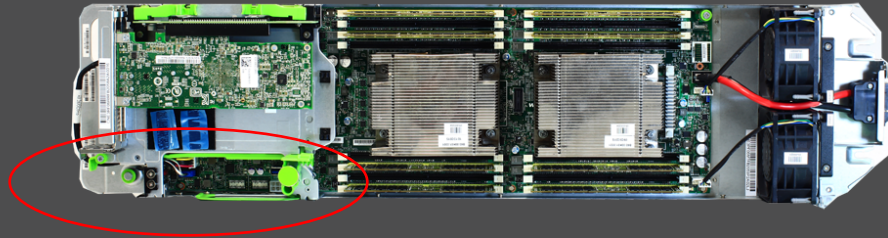
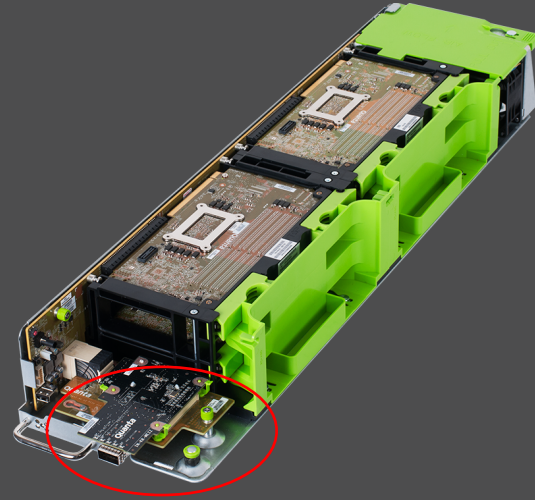
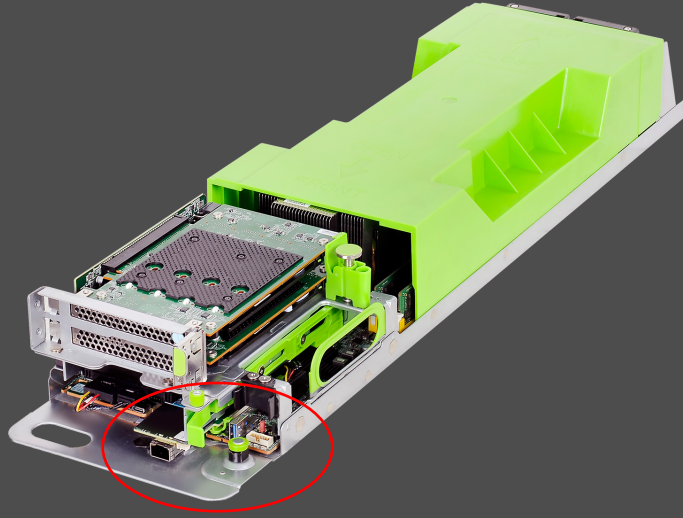


# Gratuitous Differentiation





# Tool less OCP vanity free open source cubby servers





# Open Rack Unit Innovations - Server Fans "Cube Law"

40 mm  
Fans



Traditional Server

80 mm  
Fans



OCP  
Server

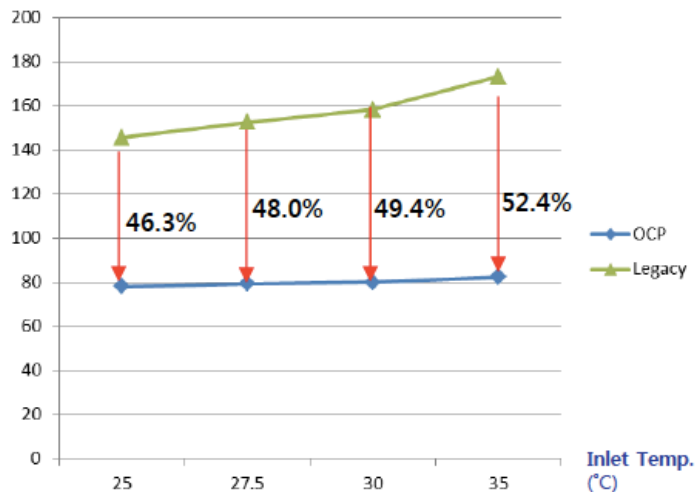


# Server Efficiency



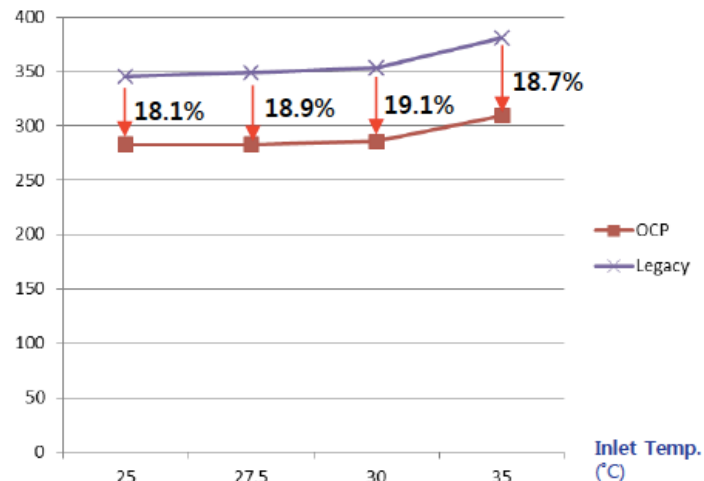
Power Consumption  
(W/Node)

Workload 0%



Power Consumption  
(W/Node)

Workload 100%





# European OCP Adoption



London Internet Exchange - First IXP in the world to adopt an open networking model

[Link to Presentation](#)



35% Reduction in TCO 30% Reduction in OPEX

[Link to Presentation](#)



Open Compute for Central Offices

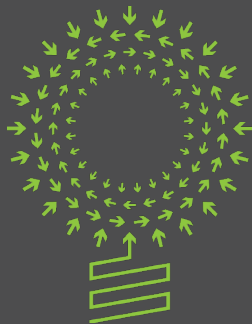
[Link to Presentation](#)



Large European Cloud Provider – Liquid Cooled OCP

[Link to Presentation](#)





# OPEN

Compute Project

SOLUTION PROVIDER®



# vesper

<https://vespertec.com/>



Allan Kaye • 1st

Managing Director - Vesper Technologies

2w • 🌐

Work in progress but watch this space....

Vesper have built this facility to house a fully functional OCP testbed enabling customers to get hands on with the the latest infrastructure and benchmark workload.

The branding went in today and the hardware is on the way!

#Ocp

#Innovation

# Welcome to the OCP Experience Centre.



vesper

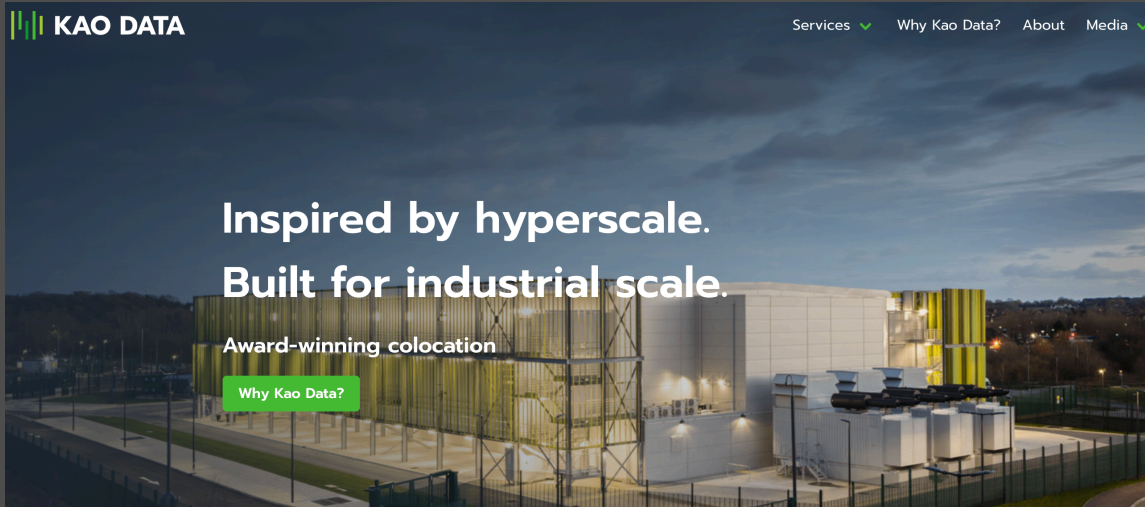


OPEN  
Compute Project®



Crawley, UK)

<https://www.rackspace.com/colocation>



Harlow, UK)

<https://kaodata.com/>





*There is no such thing as “away”  
.....when we throw things away it  
must go somewhere.*

Annie Leonard



# 46M servers to be “End of Life” (EOL'ed)” between 2019 and 2023



<https://www.ellenmacarthurfoundation.org/>

## CEDaCI - Circular Economy for the Data Centre Industry

<https://www.nweurope.eu/projects/project-search/cedaci-circular-economy-for-the-data-centre-industry/>



Ali Fenn – President of ITRenew


<https://www.itrenew.com/>

<https://www.youtube.com/watch?v=PuzEMYCGeVk>



<https://www.itrenew.com/resources/the-global-circular-data-industry/>

**ITRENEW** DATA CENTER IMPACT REPORT: THE FINANCIAL & SUSTAINABILITY CASE FOR CIRCULARITY | 1



### THE FINANCIAL & SUSTAINABILITY CASE FOR CIRCULARITY

Maximize the life of your IT hardware and gain environmental and TCO benefits  
By Ali Fenn, President, ITRenew, and Florian Fesch, Data Scientist, ITRenew

#### SUMMARY

This report presents a new way to think about the economic and environmental value of data center equipment. Based on research, interviews and ITRenew's market expertise, the report focuses on a Circular Data Center model that maximizes the economic life of hardware in the data center environment. The developed model shows clear benefits for primary and secondary equipment users that can be quantified with sustainability and financial metrics. The adoption of this business model by the global IT hardware industry can lower total cost of ownership (TCO) by 24% or more and decrease the greenhouse gas impact (measured in equivalent carbon dioxide, or CO2e) of the data center industry by as much as 24% or more.

**24% LOWER TCO AND GHG IMPACT**  
Impact of Global Circular Data Center Industry.



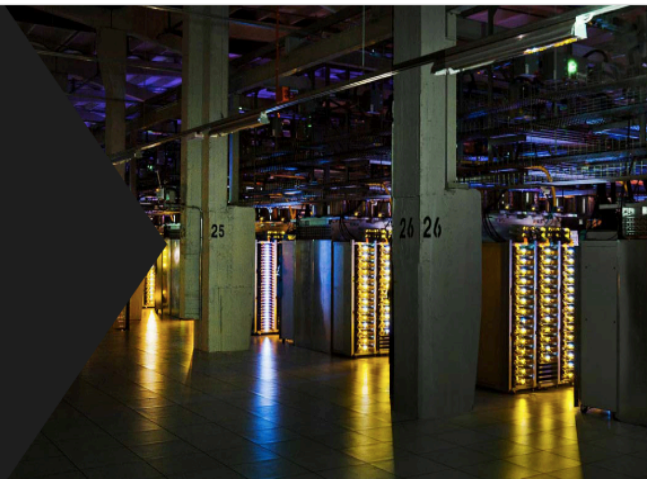


About ▾ Marketplace ▾ Contributions ▾ Projects ▾ Events ▾ SP/Reseller ▾ Membership ▾ Blog

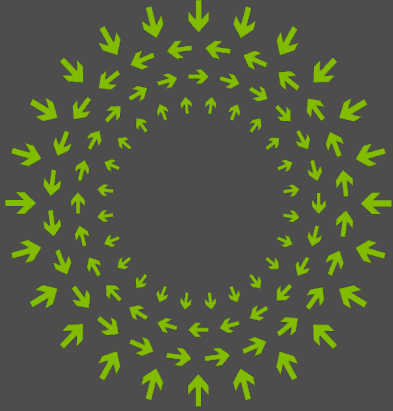
Products  
Integrated Solutions  
Circular Economy

## Open. For Business.

The Open Compute Project (OCP) is reimagining hardware, making it more efficient, flexible, and scalable. Join our global community of technology leaders working together to break open the black box of proprietary IT infrastructure to achieve greater choice, customization, and cost savings.







## OCF Marketplace

<https://www.opencompute.org/products>

## Past Events (recordings and slides)

<https://www.opencompute.org/events/past-summits>

<https://www.opencompute.org/events/past-events>

## Social



<https://www.youtube.com/user/OpenComputeProject>



<https://www.linkedin.com/groups/4152886/>



[@OpenComputePrj](https://twitter.com/OpenComputePrj)



<https://www.facebook.com/groups/opencompute/>



# Thank You

Steve Helvie  
Open Compute Project  
(OCP)

[steve@opencompute.org](mailto:steve@opencompute.org)