

2022 OCP Incubation Committee Update

Dharmesh Jani, Meta

Jessica Gullbrand, Intel

Jeff Caitlin, Celestica

Connect. Collaborate. Accelerate.



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OCP Incubation Committee Roles and Responsibilities

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IC Role in the first decade of OCP

2011-2020

Grow

Create/update project charters that set guidelines & limits for activity & scope of work. Review contributions for technical completeness

Contribute

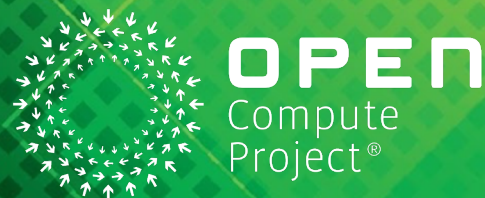
Reviewing and voting on the disposition of each contribution to the OCP Foundation and ensure OCP principles are embodied in the contributions

Develop

Provide guidance and feedback to the incubated projects and help shape new projects & encourage the Project Leads and Community to bring new contributions forward.

Establish

Launch and establish cadence for various projects to adhere to the OCP foundation charter.
Develop community connections via IC representative connecting with the Foundation



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Evolving role of OCP IC

02

Proactive Approach

Expand to interesting and relevant work beyond the administrative work.

04

New Area: Problem Focus

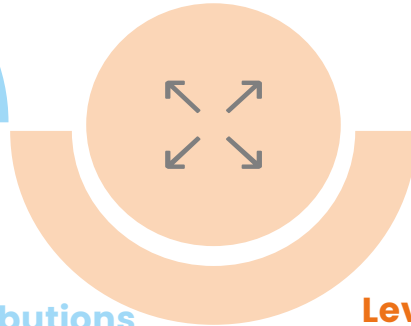
Define new direction(s) for OCP for the next 2-3 years involving all leadership



Past Role: Vote for Contributions

01

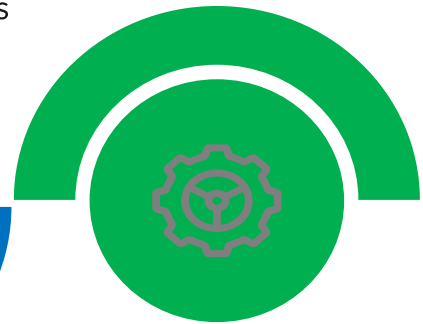
Review and vote on the disposition of each contribution to the OCP Foundation



Leverage Collective Experience

03

Broader range of participants with a diversity of backgrounds and companies to provide valuable inputs



Impact Oriented Output

05

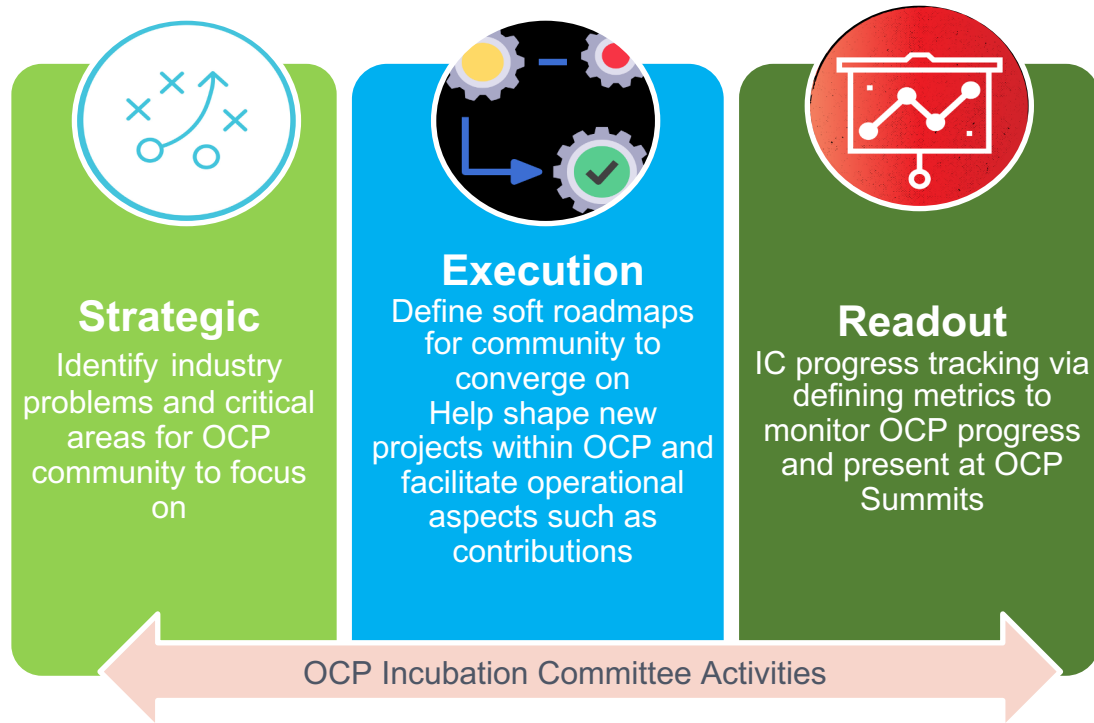
Translate solutions into specs, frameworks and projects for supporting community needs



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OCP Incubation Role Today!



- **Identify** the industry **problem sets**
- **Drive** the **solution discovery** process
- **Crystalize and define** the roadmap
- **Influence** the OCP board



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Contributions approved

PROJECTS

Networking:
9

Server:
8

Cooling:
1

TAP:
1

Strat Initiative:
1

Telco:

CATEGORIES

Specifications:
13

White Papers:
5

Requirements:
3

Design Packages:
3



UPDATE ON 2020-2021 STRATEGIC INITIATIVES

Jessica Gullbrand, Intel
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OCP industry challenges for 2021

Our efforts started with additional external perspective

Volunteer Leadership involvement

The industry analysis from Omdia was presented to entire VLs and subsequently each PLs also communicated the ask to their respective community to funnel major problem statements community was experiencing

External perspective via OMDIA

Obtain external perspective on the areas where OCP needs to focus on via activity assessment.



Identify key themes and rank

Data collected was organized and categorized into key focus areas. These were voted by all the OCP IC members to generate ranking of the areas to identify top 4-6 areas

Course of action for 2021

On Dec 3 IC meeting, we have started deliberating the plan for 2021 and how to tackle the top problem statements identified.

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2020-2021 Focus Areas



Std Dev	2021 Order	Vertical	Title	Owners/Stakeholders	Proposal	Description of industry challenge
2.6	1	Enterprise	INTEGRATED SOLUTIONS	Steve Helvie Rajeev Sharma Ron	Several IS categories were recommended by OMDIA. Steve Helvie has volunteered to choose one and organize a Pilot program to address that segment.	Customers (other than hyperscalers) want to buy solutions that comprehend hardware, software, security features. Whereas solutions are available from an OEM, most OCP products are complementary. Lack of solution providers that define and offer turnkey solution with OCP HW, particularly storage.
2.4	2	HyperScale Enterprise Telco Edge	SUSTAINABILITY & CIRCULARITY	DJ	Recommend that we create a cross-functional team to identify formulate a overall strategy for the organization. Likely to affect many existing projects. Also can include the creation of a 5th Tenet.	The linear model of Take-Make-Dispose is reaching its physical limits. 2015 study indicates global demand for resources was equivalent to 1.5 times what earth can support in one year. Key elements of the circular economy model optimise resources by circulating products, implemented through design practice, refurbishment/remanufacturing, redistribution/secondary market sales and recycling.
2.2	3	HyperScale Enterprise	ISC SECURITY (DC FACILITIES EQUIPMENT)	Security Project, Common Platforms	expand security project charter and create sub-project as necessary. The "IC Expectations" table produced by the COMMON PLATFORMS work stream can include a column for DC industrial control systems (ISC). Same security recommendations for IT	Security for extended data center facilities equipment such as power, cooling and DC facilities monitoring and control. Security threats exist today where the DC equipment can be compromised cause mass outages or breaches of data.
3.3	4	Hyperscale	AI HW-SW DESIGN COLLABORATION	DJ	Possible new project or Extension of Symposium	To solve the growing complexity of AI workloads, co-design approach is needed to allow for simultaneous work on all the bottlenecks (HW and SW) which can affect the performance such as training time. An open source effort in this space can provide opportunity for solving some of the problems
2.5	4.9	Hyperscale	COMMON FOOTPRINT FOR ML WORKLOADS	DJ	Combine with "AI HW-SW Design Collaboration"	Lacking connections to solve similar ML opportunities
2.6	5	HyperScale Enterprise	COMMON TEST AND VALIDATION FOR OCP DEVICES AND MODULES	DJ with support from Elaine?	Possible new project if we can identify member interest. Interest today inside Facebook to kick this off.	Performance benchmarking with validated test is critical for faster adoption of OCP devices. Currently OCP does not have any mechanism to incorporate this aspect of HW development.
2.8	6	HyperScale Enterprise Telco Edge	SCALE OUT OF LIQUID COOLING/IMMERSION	Brevan (lead) Don Mitchell Rolf Brink Steve Mills Jessica Gulbrand	Proposed that DCF (Brevan) take lead on this and use the work streams of ACS and the new ACF project to drive activity.	New breakthrough in power delivery, cooling, and security if IT equipment affects and is limited by the advancement of the Data Center facility. The DC facilities need a 'standard' interface to their building of cold plate and immersion cooling.
3.0	7	HyperScale Enterprise Telco Edge	CLOUD SERVICE MODEL			Lack of a comprehensive Service Model for cloud-based hardware where all service is done remotely.
2.7	8		SOFTWARE DEFINED MEMORY (SDM)		Develop thru FTS Community	Persistent Memory is a new storage tier that needs management same as other storage tiers. Opportunity for OCP to introduce standardizations. Possible compatibility with modularization activities.
2.7	10	HyperScale Telco	TRANSITION to 400Gbs			Challenges delivering high capacity switching for Datacenter (400G and beyond). Transceiver power, too many PHY options, and overall package power. Several companies working on COBO silicon.
2.6	11	HyperScale Enterprise Telco Edge	NEW PLATFORM INITIALIZATION ARCHITECTURE			Platform Initialization Architecture. Too many run time processes that impact the OS (example: correctable memory error requires all cores to be halted while BIOS performs error correction).
1.6	12	HyperScale Enterprise Telco Edge	DATA STORAGE			Data storage technology will be required to supply over 19 Zeta bytes (ZB) of storage space by 2025 (DC). Storage technology follows two vectors: Speed, Capacity, Speed PUE approaching 1.02 and AC-DC conversion efficiency approaching 98% leaves little opportunity to continuous improvement. Scaling the existing BKI's to create a connected society around the globe will face new challenges (power grid, harsh environment, real estate, etc.)
2.9	13	HyperScale Enterprise Telco Edge	DC ENERGY EFFICIENCY			Design for Telco/Carrier Consumption
0.6	14	HyperScale Enterprise Telco Edge	Enable Telco's to Consume Hyperscale HW (new Title only)			Expected huge growth worldwide for CPE, PON & OLT device deployment, driven by disaggregation.
1.2	15	Enterprise Telco Edge	PON/OLT & CPE DISAGGREGATION			IMS Research: PON potential high growth area. Market just forming for disaggregated cell tower equipment. Latency now appearing as a discussion
0.3	16	Telco Edge	OUTSIDE PLANT COMPLIANT OFFERINGS			Delivering high capacity switching devices that meet Outside Plant Compliant (OSP) use case requirements.

INTEGRATED SOLUTIONS

SUSTAINABILITY AND CIRCULARITY

DATA CENTER FACILITIES SECURITY

AI HW AND SW CO-DESIGN

COMMON TEST AND VALIDATION

SCALE OUT LIQUID COOLING/IMMERSION

https://docs.google.com/spreadsheets/d/1eA6T8Sg7AH_e8WQJbVwFlaOYumsUUCpULQX6Jk77QmA/edit#gid=0

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2021 Strategic Initiatives

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Integrated Solutions

Sustainability & Circularity

Common Test and Validation

Data Center Facilities Security

Scale Out Liquid Cooling/
Immersion



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2021 Strategic Initiatives

2021 Strategic Initiatives	Goals	OCP Project
Integrated Solutions	Generate OCP products consisting of integrated OCP HW, SW & security features	Marketplace: <ul style="list-style-type: none">- TIP collaboration- Storage Solutions- Kubernetes
Sustainability & Circularity		
Common Test and Validation		
Data Center Facilities Security		
Scale Out Liquid Cooling/ Immersion		

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Common Test and Validation		
Data Center Facilities Security		
Scale Out Liquid Cooling/ Immersion		

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Data Center Facilities Security	Develop & introduce security of extended DC facilities equipment (power, cooling, monitoring, control, ...)	Operation Technology Security (OTS)
Scale Out Liquid Cooling/ Immersion		

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Data Center Facilities Security	Develop & introduce security of extended DC facilities equipment (power, cooling, monitoring, control, ...)	Operation Technology Security (OTS)
Scale Out Liquid Cooling/ Immersion	Create a “standard” interface between DCF and liquid cooled/immersed IT equipment	Advanced Cooling Facility / Solutions

2021 Strategic Initiatives

Sign up and participate* in the OCP Strategic Initiatives:

- Sustainability & Circularity + Common Test & Validation - Strategic Initiatives (SI)
<https://www.opencompute.org/projects/ocp-2021-strategic-initiatives>
- ISC Security - Operation Technology Security (OTS)
<https://www.opencompute.org/projects/operation-technology-security-incubation>
- Scale Out of Liquid Cooling/Immersion – Cooling Environments (CE)
<https://www.opencompute.org/projects/cooling-environments>

*membership is not required.



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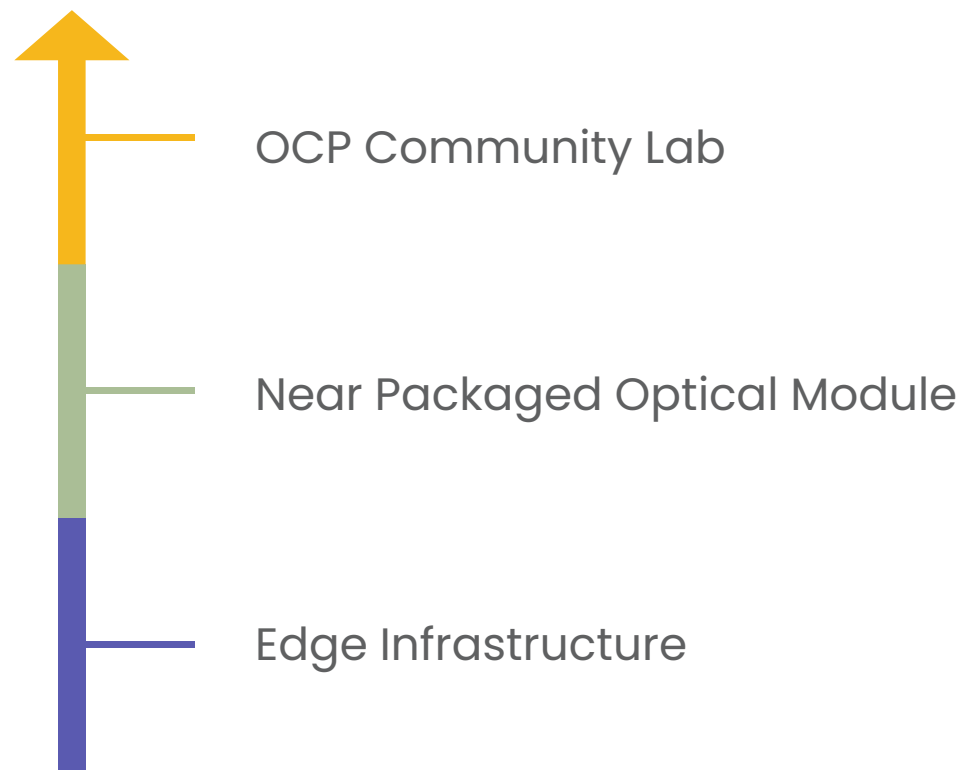
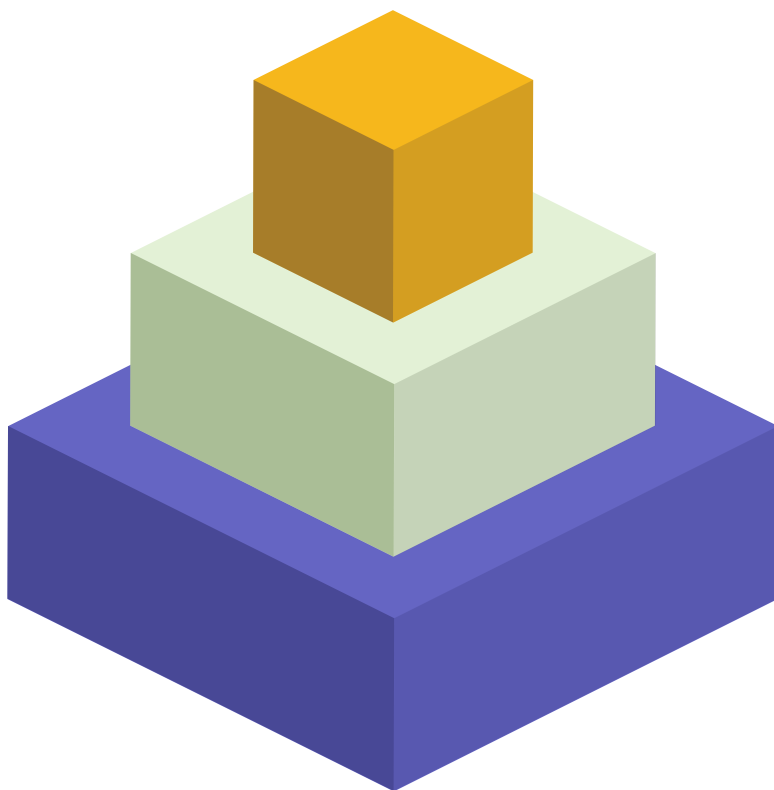
Introduction to 2022-2023 Strategic Initiatives

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Three areas identified





OCP Community Lab

- **WHAT:** OCP Community lab to foster technology development
- **WHY:** Serve clear need of the community to have a neutral location to collaborate on aspects of open-source development
- **HOW:** We are starting to work with some of our members to create lab space, provide hardware gear and support the lab ops to serve open system firmware project to start with
- **WHO:** HPE, WiWynn, Yahoo Japan, Meta, Google to name a few

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Near Packaged Optical Module

- **WHAT:** Standardization of the mezzanine card NPO module for dense networking platforms that are emerging starting with 51.2T systems
- **WHY:** Setting up a standard approach for a subsystem ensures that industry has a better guidance for developing cost effective next gen solutions that have a large volume adoption
- **HOW:** We are introducing this idea via tech talk, followed by having an optical track at OCP Global Summit in Oct 2022
- **WHO:** The work is just starting so ping me if you want to get involved

Edge Infrastructure

- **WHAT:** Scaling liquid cooling, data center facility to the edge as well as extending security requirements at the edge
- **WHY:** Growth in edge applications and deployments due to interest in distributed edge applications
- **HOW:** We are looking for ways to extend some of work done in few OCP projects into the edge use cases via close collaboration
- **WHO:** The work is just starting so ping Jessica if you want to get involved



OUR ASK

- HELP US LEAD THESE INITIATIVES. OUR SUCCESS IS OUR COMMUNITY'S SUCCESS.
- ATTEND OUR IC MEETINGS - THEY ARE OPEN TO THE PUBLIC. FIRST THURSDAY OF EVERY MONTH.
- 2023 STRATEGIC CONCEPTS ARE BEING COLLECTED THROUGHOUT THE YEAR - GET INVOLVED.
- REACH OUT TO US WITH COMMENTS/SUGGESTIONS:
 - dharmesh.jani@ocproject.net
 - jessica.gullbrand@ocproject.net
 - jeff.catlin@ocproject.net

**“If you want to go fast, go alone
If you want to go far, go together.”**

African Proverb

