



SONiC Paves the Way for Open Networking!



STORDIS



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Connect. Collaborate. Accelerate.



OPEN SPEAKERS

Compute Project®



Steve Helvie
VP Channel
Development



Kamran Naqvi
Principal Network
Architect



Matthew Roman
VP Marketing and
Product Management



Łukasz Łukowski
Chief Sales and
Marketing Officer



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Photo by [Shane Rounce](#) on [Unsplash](#)

One thing about open source is that even the failures contribute to the next thing that comes up.

Unlike a company that could spend a million dollars in two years and fail and there's nothing really to show for it, if you spend a million dollars on open source, you probably have something amazing that other people can build on.

Matt Mullenweg



240+ companies
8K engineers
190+ contributions

OCP Tenets





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Broadcom at a Glance



FY20 net revenue
of **\$23.9B**



\$5.0B investment
in R&D in FY20



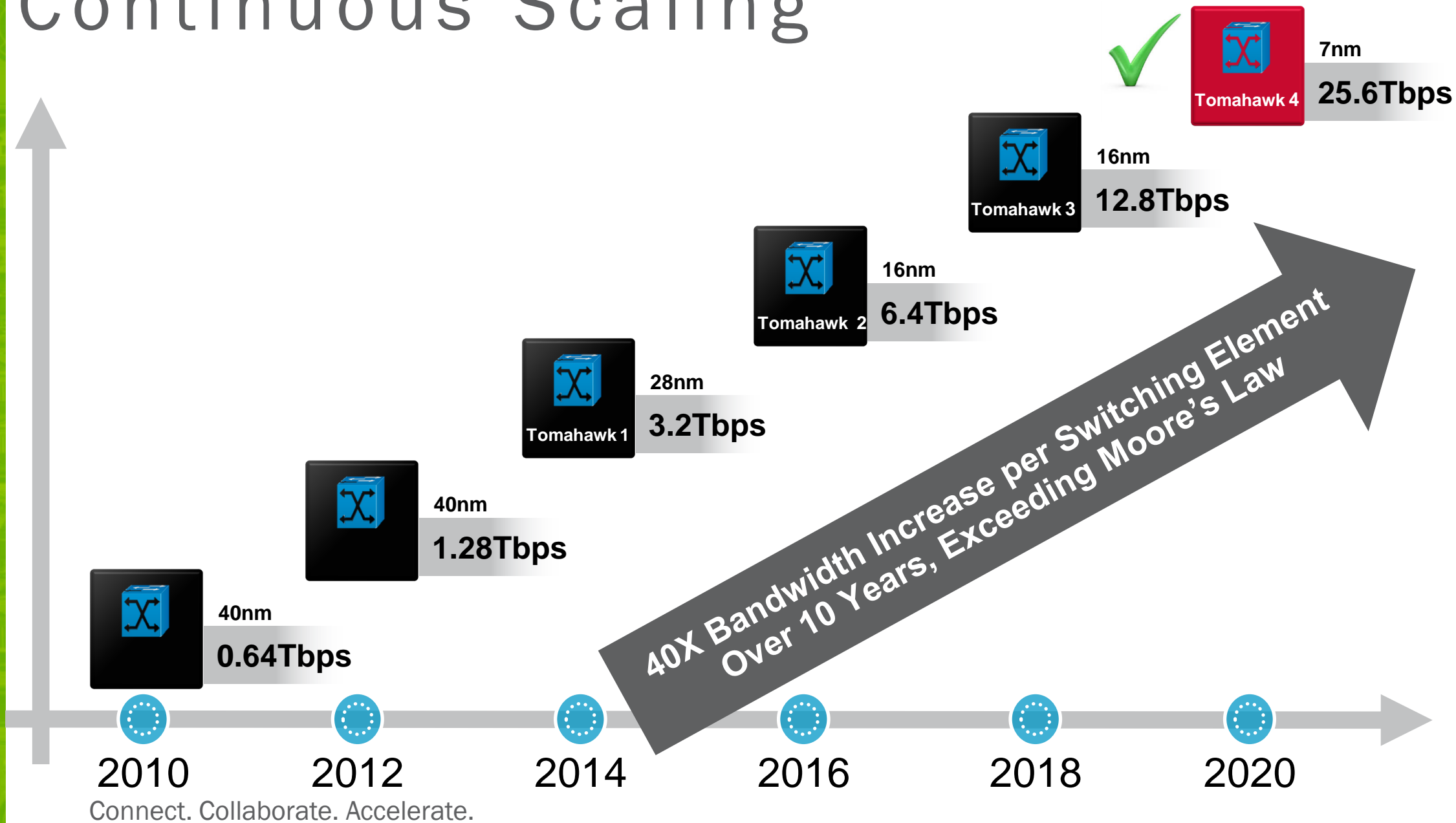
One of the industry's
broadest IP portfolios with
>20,000 patents



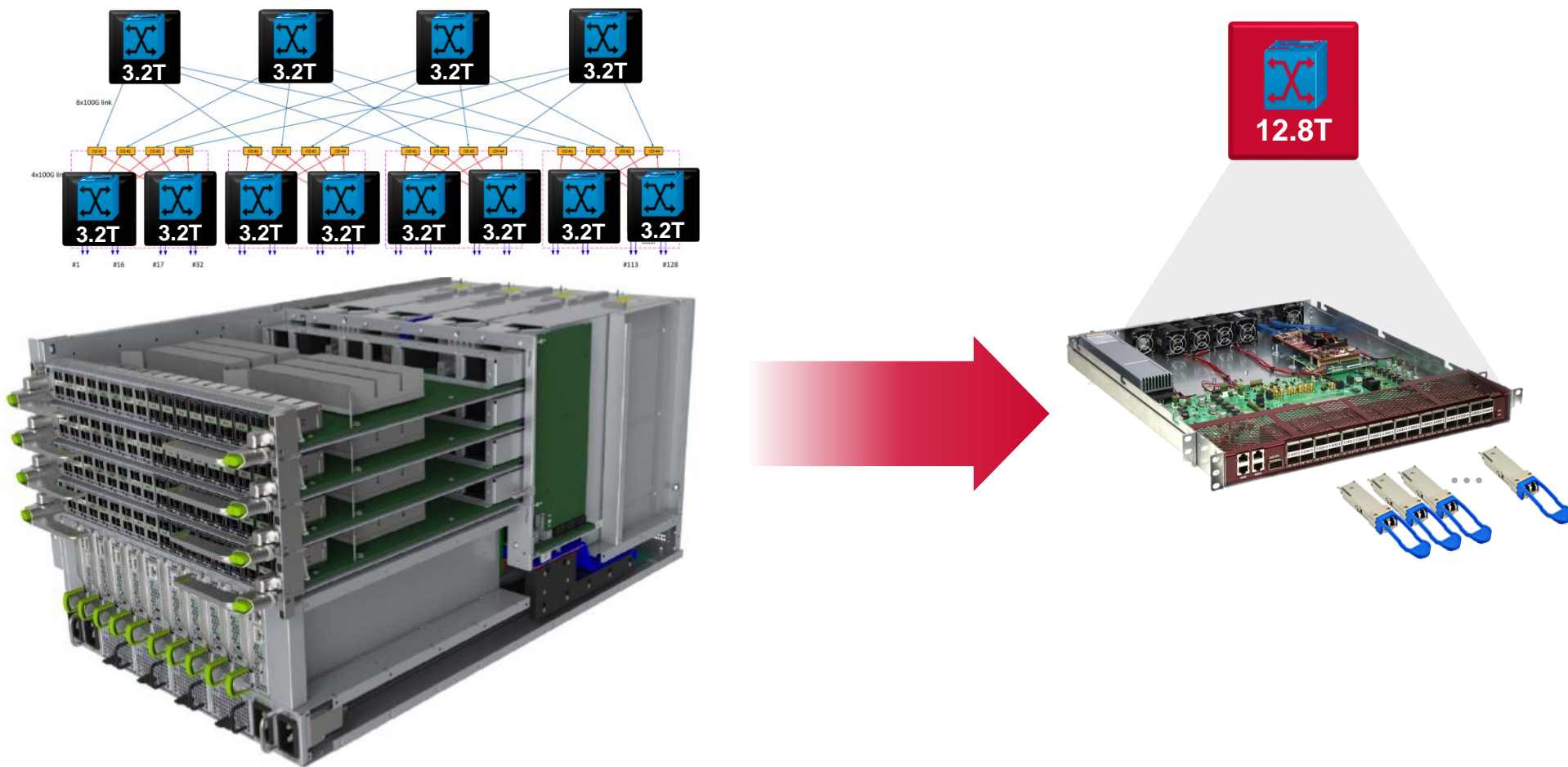
25 Category-Leading Semiconductor & Infrastructure Software Divisions

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Continuous Scaling



Broadcom-Enabling Open Networking




Simplification in Hardware leads to simplification in Software

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SONiC and Broadcom








Software for Open Networking in the Cloud
SONiC

In production today at Microsoft

Contribution through SONiC community

Runs on top of a Linux distribution

Collection of networking software components
e.g. L2/L3 protocols BGP, LAG, redis for routing information

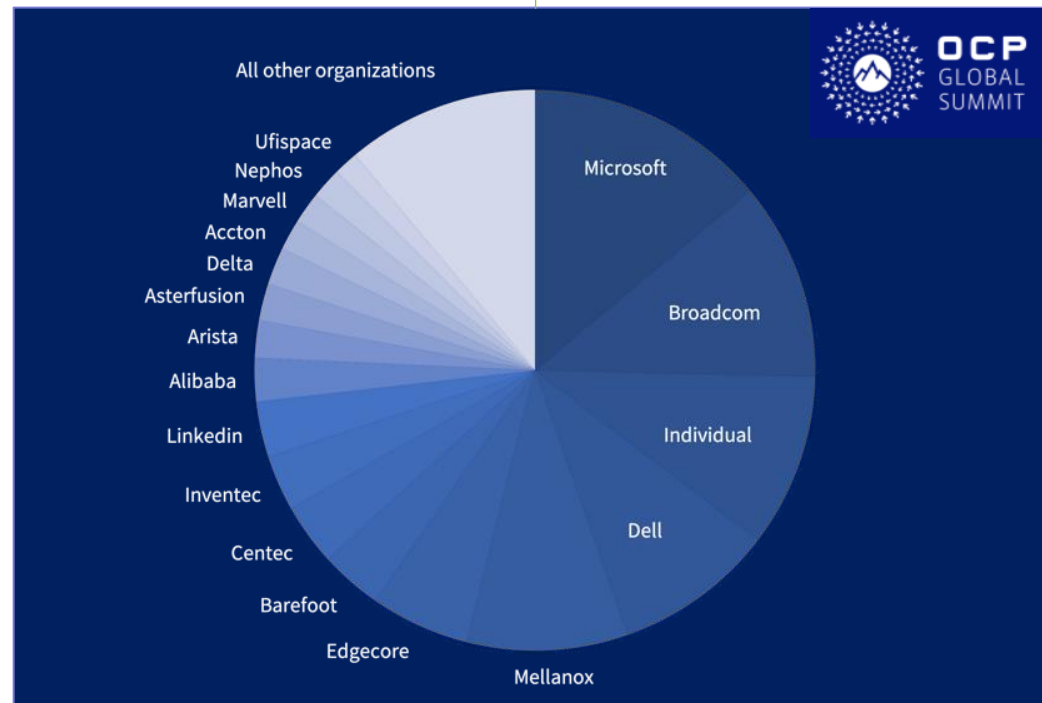


BRCM is the largest contributor to SONiC after Microsoft.

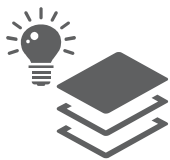
Source: Microsoft Keynote at OCP Global Summit - 2020

SONiC was developed and open sourced by Microsoft in 2017

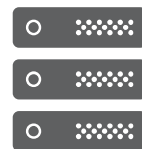
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SONiC and Broadcom



- Innovations across the entire software stack (SAI, Application, Management)



- Platform Development Kit: A framework to enable new HW platforms in a matter of days, rather than months



- Enabling new use cases (Telemetry, Flow analytics, Time Sync, Multi-tenancy)



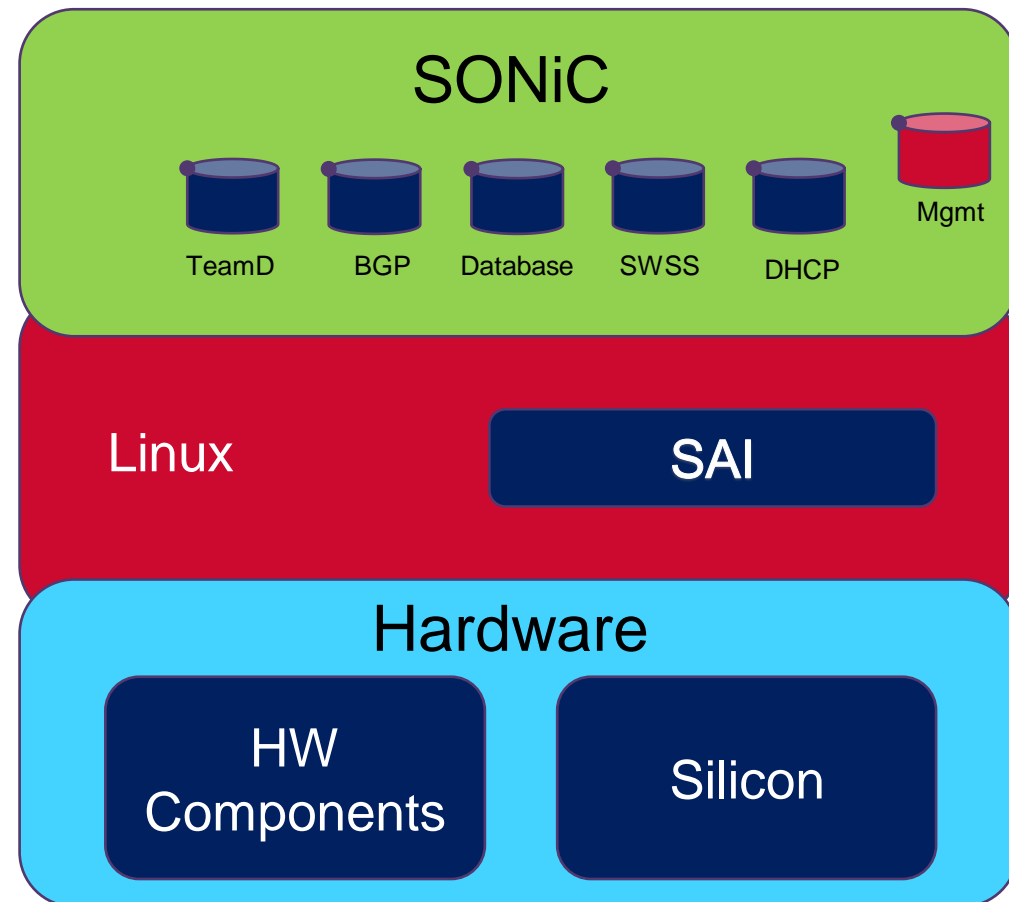
- Enabling open-source to move at the speed of silicon innovation



SONiC Architecture

- Built on a Linux Base
- SAI (Switch Abstraction Interface) acts as translator between switch silicon and SONiC
- Containerized Architecture
 - Provides Serviceability
 - Enables Extensibility
- Open Management Framework for Operational Simplicity and Automation
 - gNMI
 - RestConf
 - OC Yang Models
 - Industry Standard CLI

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SONiC Deployment @Large Enterprise

Case Study



Customer Profile

Introduction

Large global Enterprise Customer

- History of Mergers and Acquisitions
- Security and Isolation is Critical
- Time to Market for new products is important

Customer Pain Points

Existing Data Centre switching solution didn't meet the business needs

- Legacy 3-Tier Architecture based on OEM Solution
- Lacked ability to scale, with the required pace
- Resiliency decreased with Scale

Customer's Compute/Storage requirements not fit for Public Cloud

- Cost Prohibitive
- Business Demand necessitated a hybrid approach

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Customer's High-Level Objectives

Freedom and Choice

Eliminate Vendor Lock-in (Tools, Hardware, Support)

Open APIs for management & Orchestration

Flexibility and Speed of Deployment

Fast, Seamless deployment with Minimal intervention of Network Admins

Increased Flexibility for Workload Placement

Independence & Control

Support for Multi-tenancy with complete isolation

Limit/Contain Failure Domains

Feature Velocity

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SONiC is Enterprise Ready

Customer Requirements

✓
Freedom & Choice

✓
Independence & Control

✓
Flexibility & Speed of Deployment

SONiC Solution

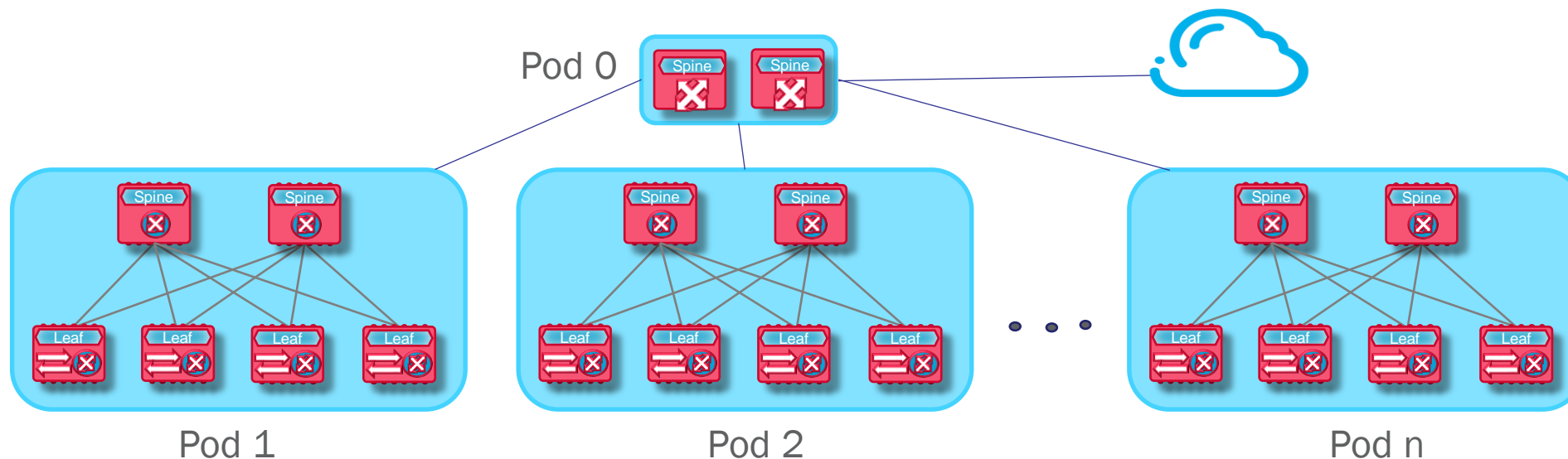
Choice of Silicon/Switch/Support = No Vendor Lock in

Multi-Tenancy Micro Segmentation Availability Zones Comm Control

ZTP gNMI OC Ansible SNMP
TPCM Open APIs YANG Puppet IS CLI



SONiC in Production



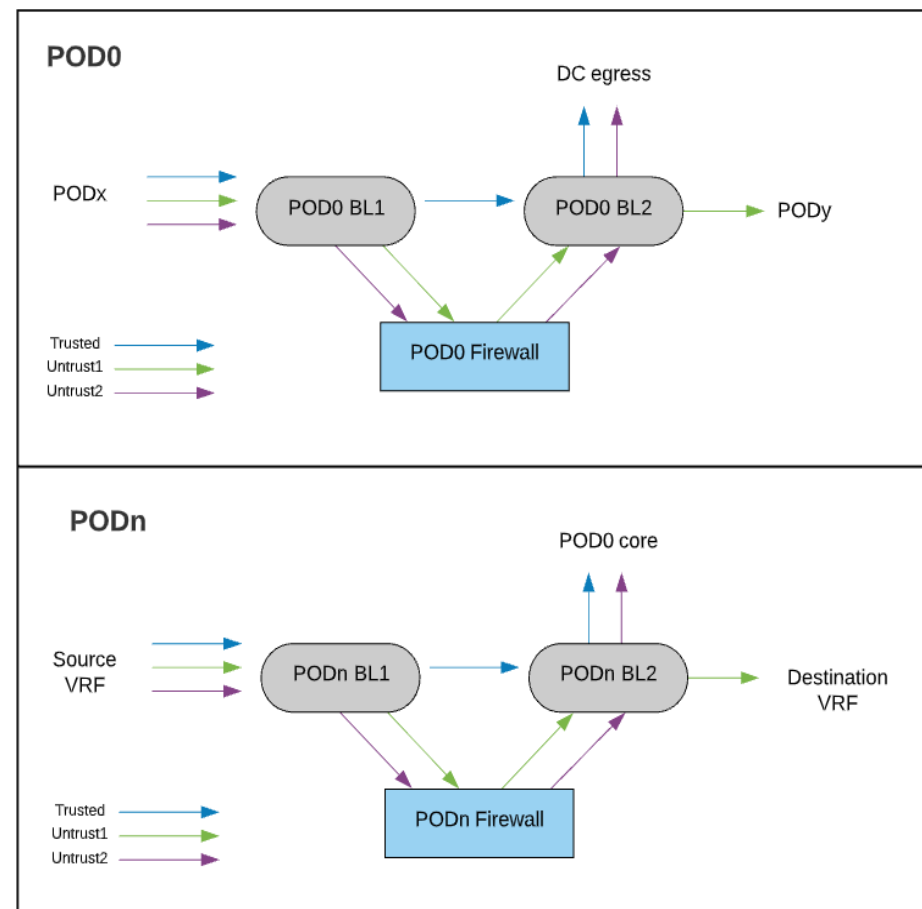
- SONiC met all customer requirements.
- Clos topology-based network deployed
 - Spines based on Tomahawk 2
 - Leaf switches based on Trident 3
- Multi-Pod Deployment PoD 0 as superspine
 - All inter-Pod communication through Pod 0

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SONiC in Production

- VXLAN EVPN based Fabric providing Multi-tenancy
- BGP as Underlay and Overlay protocol
- Select routes are leaked between VRFs.
- Separate Tenant Traffic is protected with inter VRF FWs attached to Border Leaves
 - Inter POD, Inter-VRF traffic is filtered through the Pod 0 Firewall
 - Intra POD Inter VRF traffic is filtered through the PODn FW
 - Trusted VRF to Trusted VRF traffic is sent directly without traversing FW



SONiC in Production

Current Deployment Status



L2 Design

- Europe1 DC: 259

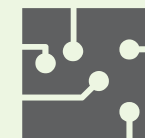
259



VxLAN Design

- Japan DC: 82
- ME2 DC: 82
- APAC3 DC: 70
- West DC: 438
- East DC: 268
- Europe2 DC: 259

1199



TOTAL

Switches in 7 DCs

1458 → 4000



Key Customer Benefits

Increased Availability – streamlined, simplified, hardened software, less prone to bugs

Ease of Management – Integration with Open DevOps tools

Massive improvement in Performance

Optimized Utilization of Servers (>70%)

Rapid Troubleshooting - Deep Visibility with silicon enabled Telemetry

Speed of Deployment (ZTP) and seamless Scalability

Built at a fraction of cost compared to OEM Solution

Industry Analyst View

Gartner

“Prediction: By 2025, **40%** of organizations that operate large data center networks (more than 200 switches) will run SONiC in production environments.”

Source: Gartner blog [SONiC Disruptions in the Data Center Network](#) (Mar 15, 2021)

“There is a very strong possibility that, within the next two to five years, SONiC for data center networking will become **analogous to Linux** as a server OS, allowing enterprises to **standardize on an NOS** that is supported across hardware vendors.”

Source: [Gartner Magic Quadrant for Data Center and Cloud Networking](#) (Jun 30, 2020)



SONiC data-center switch market will be worth **\$2 billion by 2024**.

“SONiC has the potential to become the ‘**Linux of networking**’ as the SONiC community now has more than 850 members, including major cloud providers, service providers, silicon and component suppliers, as well as network hardware OEMs and ODMs,” **Brad Casemore**, IDC's Research Vice President, Datacenter Networks

About Edgecore

- Full Portfolio of Open and Traditional Platforms
- Accton Group Branded Subsidiary - Since 2004
- Leader in Open / Disaggregated / Networking
- Headquartered in Taiwan, Offices in USA and Asia, Worldwide Sales and Support Coverage

Market Leadership

18

Designs Contributed to
Open Communities



20+

20+ Proven Commercial
Software Options



9.2M

Ports Shipped in 2020



Complete Solutions Offering



- DC Leaf, Spine, Super-Spine
- Optical Packet Transponder- DCI
- Edge Switching - Campus & Branch



- Mobile Backhaul
- Broadband Access- FTTx
- Core & Aggregation Routing

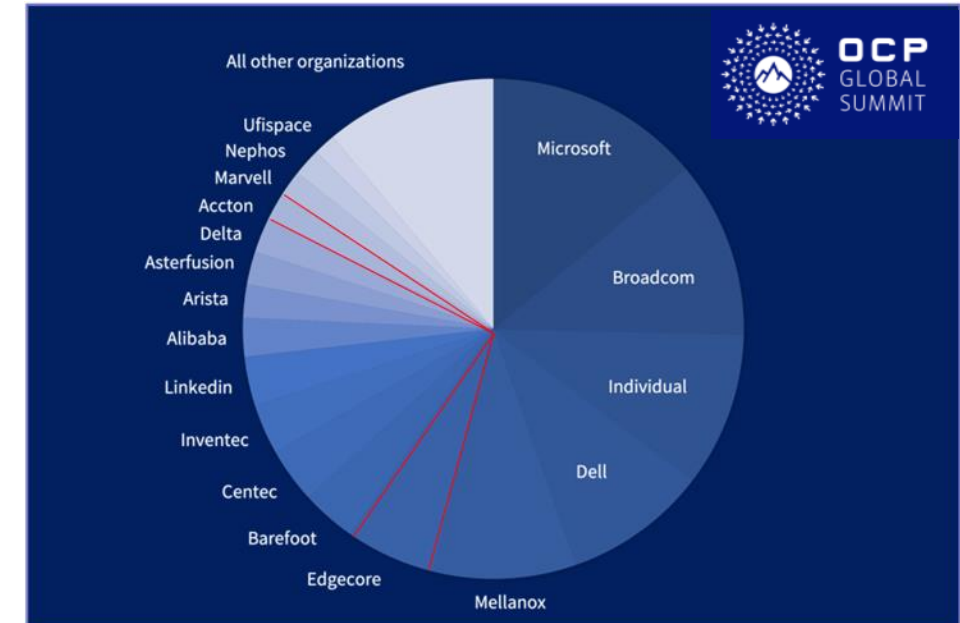


- Smart City
- CCTV Surveillance
- FTTx

Edgecore & SONiC



- Top 5 Contributor to SONiC Community
- Hardened & Validated SONiC Distribution
- Diverse Choice of Switching Platforms
 - Form-Factor - Fixed and Modular
 - Interface Speeds - 1G, 10G, 25G, 100G, 400G
 - Capacity - From 480Gb to 12.8Tb
- Comprehensive Service & Support Offering for Both Hardware and SONiC



Source: Microsoft Keynote at OCP Global Summit - 2020

Supported Platforms

25-GE



AS7326-56X
Trident 3

100-GE



AS7816-64X
Tomahawk 2

400-GE



AS8000 – Minipack
Tomahawk 3

10-GE



AS5835-54X
Trident 3



AS7726-32X
Trident 3



AS9716-32D
Tomahawk 3

1-GE



AS4630-54PE
Trident 3
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Wedge100BF-32X

Service Offering

PLAN & DESIGN

- Design support and review
- Trial support
- Validate & Stage
- Consult

DEPLOYMENT SERVICES

- Readiness assessment
- Project management
- Deployment assistant
- Engineering experts
- Lab as a Service

HARDWARE SUPPORT SERVICES

- Hardware maintenance
- High quality and reliability of repairs and spares
- Advance RMA
- Spare parts dimensioning support

SOFTWARE SUPPORT SERVICES

- Emergency service – 24x7 follow the sun
- Software maintenance
- Upgrade support
- Expert services

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Edgecore & SONiC



- Community-Sourced while supported by Edgecore
- Worldwide Developer Community Contributing to SONiC
- Further "hardened" for commercial deployment



- Tailored for Data Center use-cases
- Deployed in large-scale environments



- Single Vendor, with single point of contact for Support
- No "finger-pointing"



- Fastest time to market for SONiC
- Single vendor for platforms and SONiC distribution


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The Way2Open: We live our Vision



There to Support




 To introduce Open Networking in EU


Open Networking



 Open Networking
 Telco Project
Open Networking
Broadcast Project

SDN Project




 P4 Programming
and SDN Training


Academy



 UK Office Founded

UK Office



 Own Programmable
Switch Platform

APS Switch

2014

2015

2017

2017

2018

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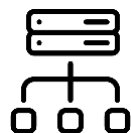
The Way2Open: We live our Vision

There to Support



Started SONiC
Development

SONiC Activity



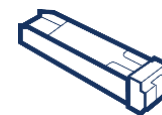
Introduced SONiC
Remote Lab

SONiC Lab



Development of
SONiC SW Tools

SONiC Tools



Introducing
Switch2Open
Product range

#SWITCH2OPEN



STORDIS
#Switch2Partner
Program

Partner Program

2020

2020

2021

2021

2021

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The Way2Open: We live our Vision

There to Support



Open2Support
Smart | Advance |
Premium

STORDIS SLA



SONiC Certified
Training Academy

Academy



100% on Open
Source Networking

Open Source

2021

2021

Future

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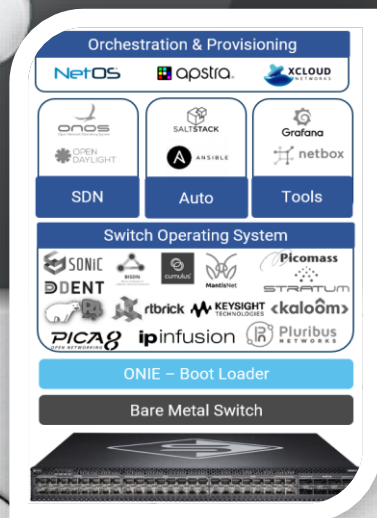
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Our Service for You

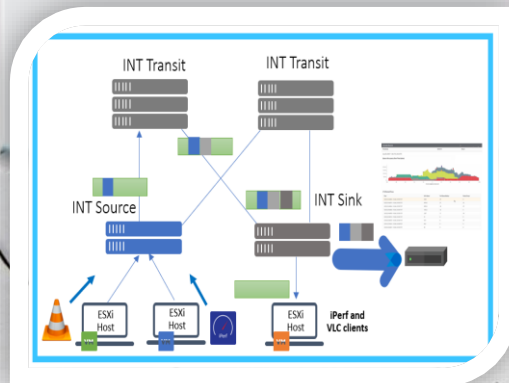
Benefit from our Service offering



Consultancy Service



Solution Design Service



Integration Service



Support Service



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Community is Key

We are committed to Community work and give back



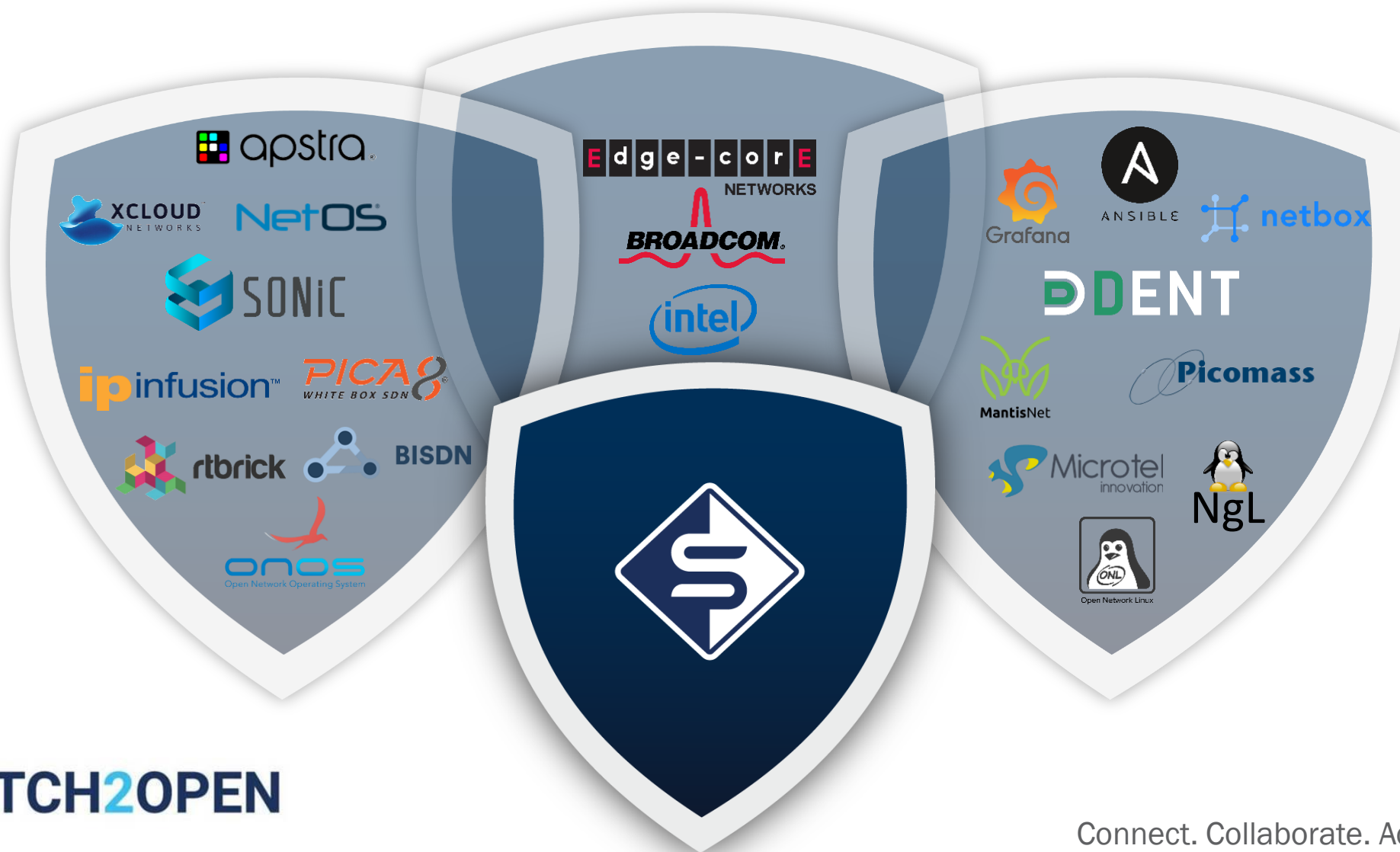
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Our Partners Trust Us

Only trust bring success



#SWITCH2OPEN

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“Freedom is nothing else but a chance to be better”



Albert Camus

“Let’s be better Together”



Regional
Community

Q&A



THANK YOU

