OCP
SUMMIT

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OPEN. FOR BUSINESS.

Main Drivers for Alibaba DC Network Evolution

Fast Growth	Hyper Scale	Diverse Applications

Alibaba Network Infrastructure
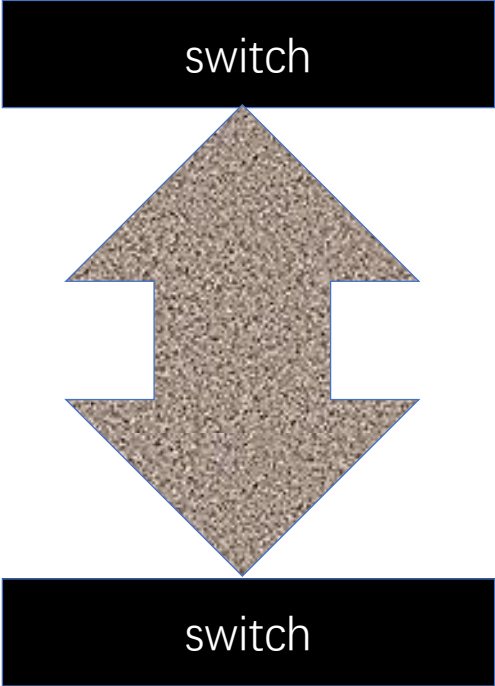
Performance, Cost, Feature Velocity, Reliability

Smart Operation

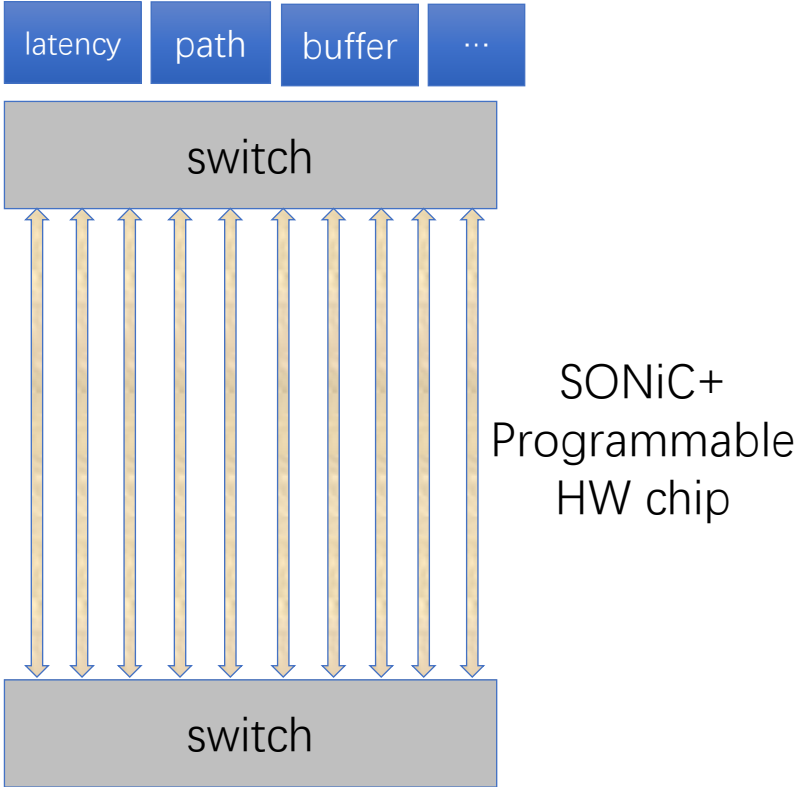Smart Operation = DATA+ DATA Analysis

From Black to White

Traditional Switch : black box , low visibility

Alibaba Open Switch

| latency | path | buffer | ... |

switch

switch

Network Transparency

switch

SONiC+ Programmable HW chip

switch

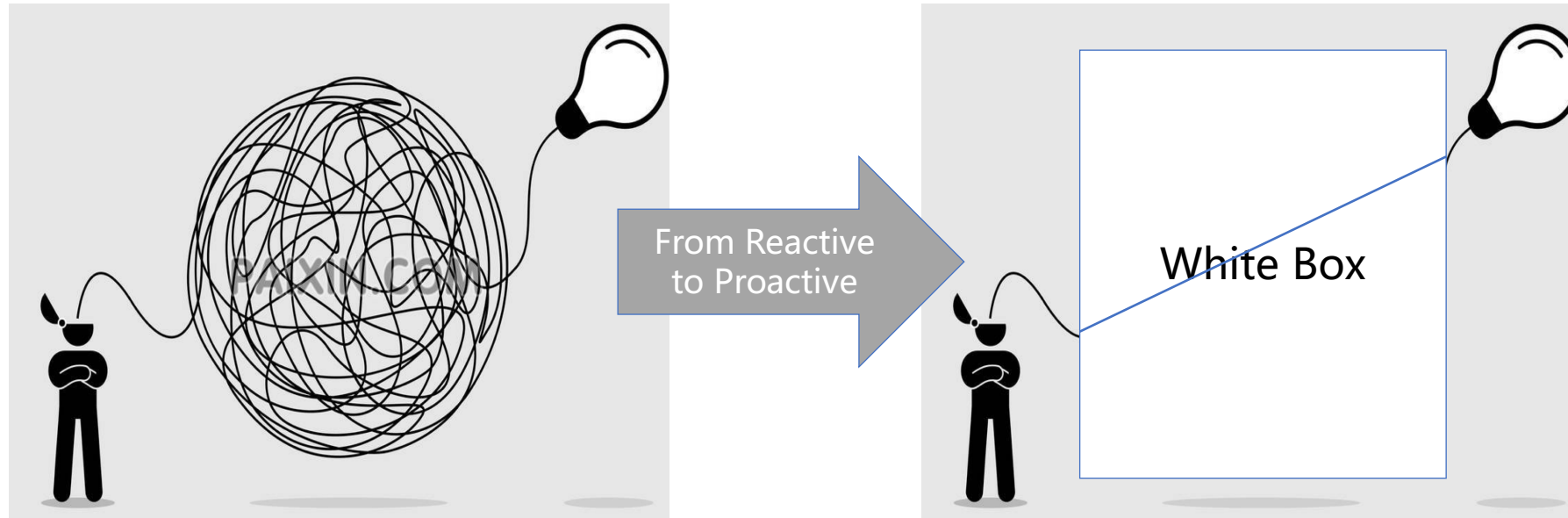Limited Data : operational data only, very limited user flow information, operation inefficiency
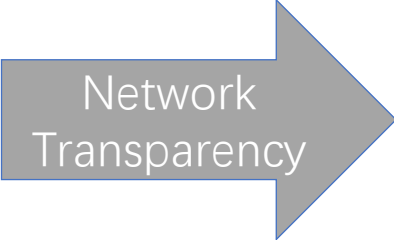
Per flow data: path, latency, rate; buffer snapshot, packet drop and reasons ...

Smart Operation: Self-driven Network

From Reactive to Proactive

White Box

- Reactive to application packet loss and SLA changes
- Traditional troubleshooting by network engineer
- Black box switch, vendor specific debug

- Proactive to packet loss and SLA change
- Per-flow data collection and big data analysis, full automation
- Open and Transparency

Community Participation

- Announce joining SONiC@OCP community at ONS 2017
- Expand ODM and ASIC vendor SONiC@OCP support
- Lead SONiC adoption in China
- Major contributor to SONiC

Alibaba Contributions to SONiC Community Release

Quote from SONiC community 201712 release notes

Release	Release Date	SAI version	Features Included
SONiC.201712	12/15/2017	1.0	SONiC Support SAI 1.0
			Fast Reload
			ConfigDB framework
			<mark>TACACS+</mark>
			<mark>LACP Fallback</mark>
			<mark>MTU Setting</mark>
			<mark>Vlan Trunk</mark>
			Dynamic ACL Upgrade
			SWSS Unit Test Framework

- Special thanks to
    - <mark>Alibaba team for contribution on: VLan Trunk, TACACS+, MTU Setting, LACP Fallback</mark>
    - Mellanox team for contribution on Dynamic ACL Upgrade
    - LinkedIn and community on meticulous design reviews
    - Microsoft team for contribution on: SONiC Support for SAI 1.0, Fast Reload, ConfigDB framework and SWSS Unit Test Framework
    - ASIC partners to provide SAI 1.0 support
    - Platform partners to for platform driver support

SONiC Development @Alibaba

- Highlights besides features contributed to community
  - Lightweight server dual home solution
  - 25G/100G RDMA support
    - RoCE v2 based RDMA
    - DC-QCN
  - BGP enhancements
  - gRPC based network monitoring
    - Buffer status, Device healthy subscription
  - INT based network telemetry
    - Intelligent Trigger
    - Upstream report including Flow tracking, Latency, path change detection based upstream report
    - Local report with packet mirror on drop, Queue depth
    - Silent packet drop trouble shooting

SONiC Deployment @Alibaba

- Advanced network telemetry deployment experience
  - Challengers: inter-operability, vendors, chips, standards (IETF, P4 spec)
  - The economic aspect to deploy INT based network telemetry
- Deployment plan
  - Massive deployment plan
  - We fully commit