# P4-enabled NICs

## Acceleration of OVS

**Petr Kastovsky**

**kastovsky@netcope.com**

53% CAGR 2015–2020

- Smartphones (inc. Phablets) (76%,81%)
- Nonsmartphones (2%,1%)
- PCs (9%,3%)
- M2M (3%,7%)
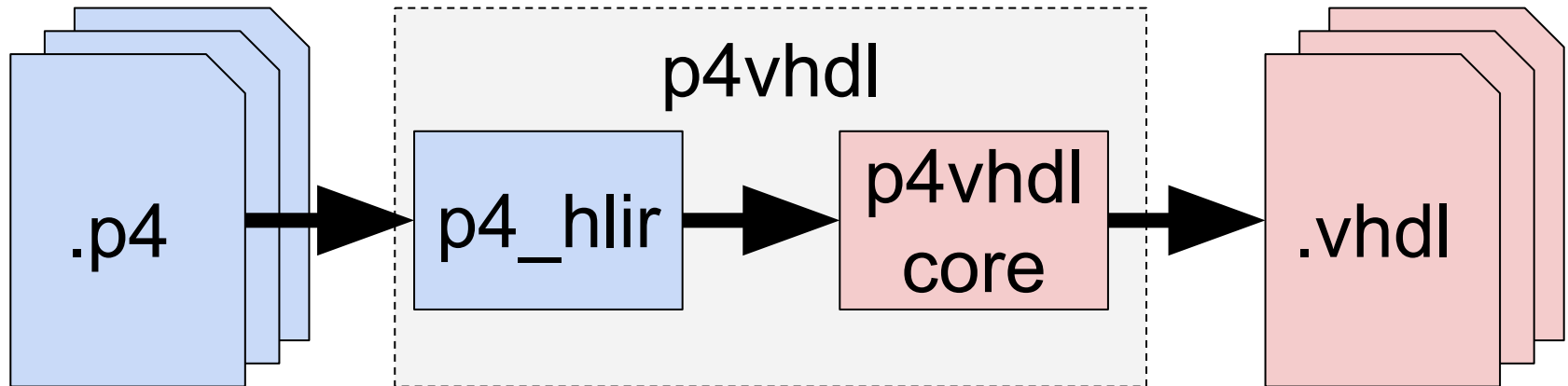- Tablets (9%,8%)
- Other Portable Devices (0.03%,0.00%)

Exabytes per Month
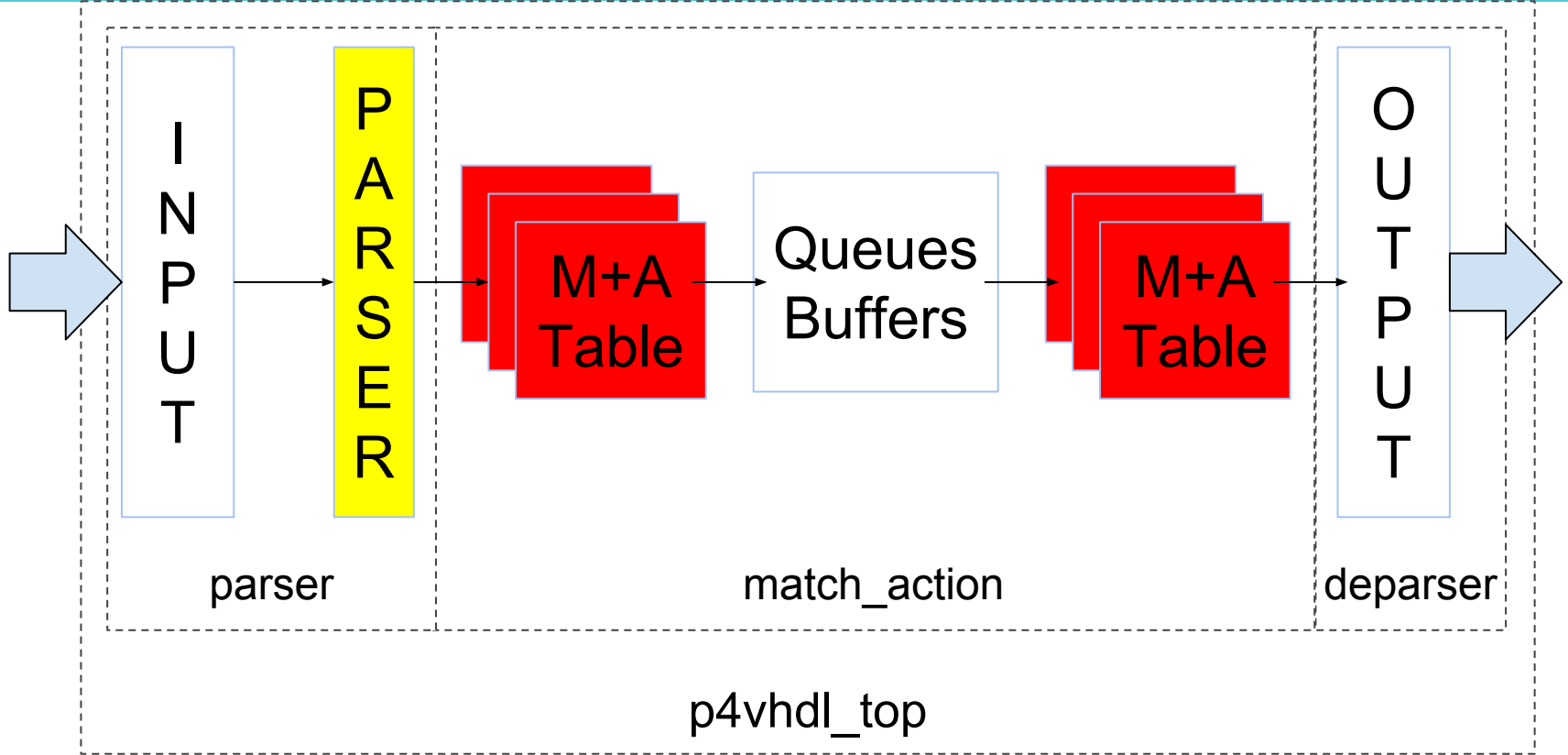
# Building blocks
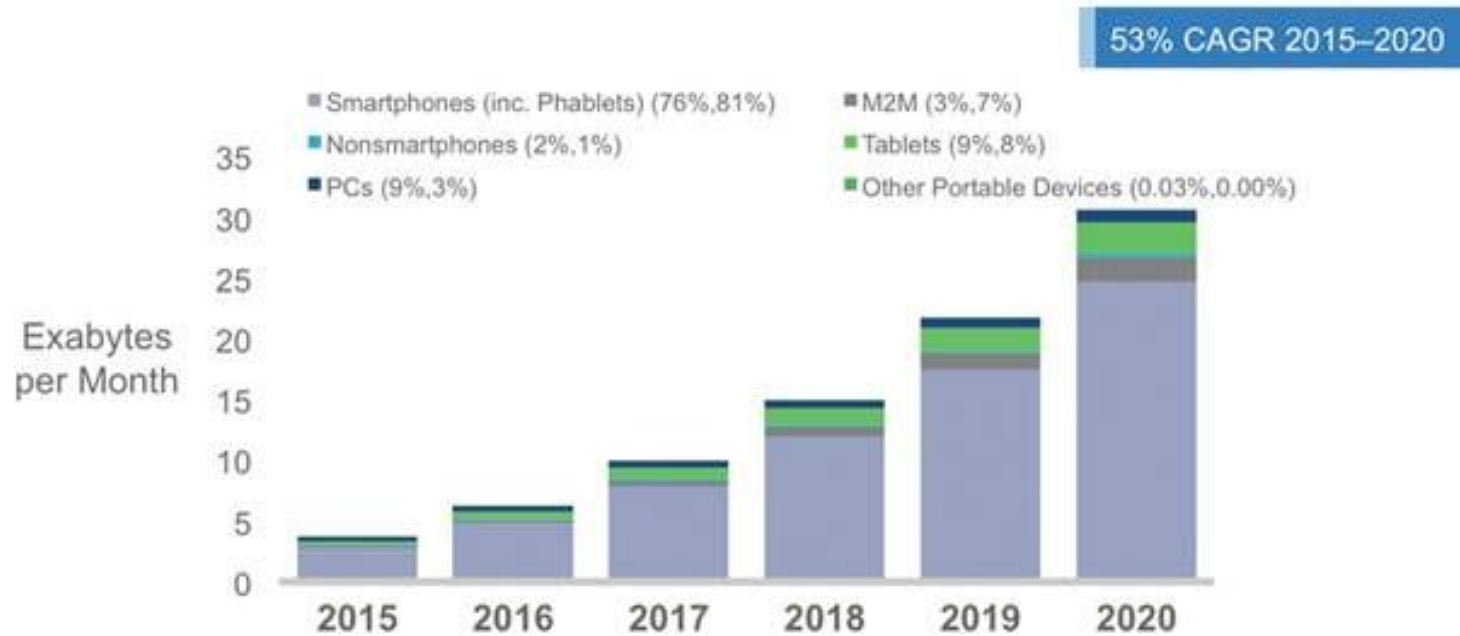
- Packet header processor
  - Configurable decoding of packets now running at 100G and 400G under preparation
- Lookups and classifiers
  - various hashes: cuckoo hash, perfect hash; bloom filter, TCAMs, Tries, pattern matching
- Packet editing IPs (e.g. encryption)
- Network interfaces 10/40/100GE
- Software interfaces DPDK and NDP API

Decode → Classify → Modify → Send

# NFV integration
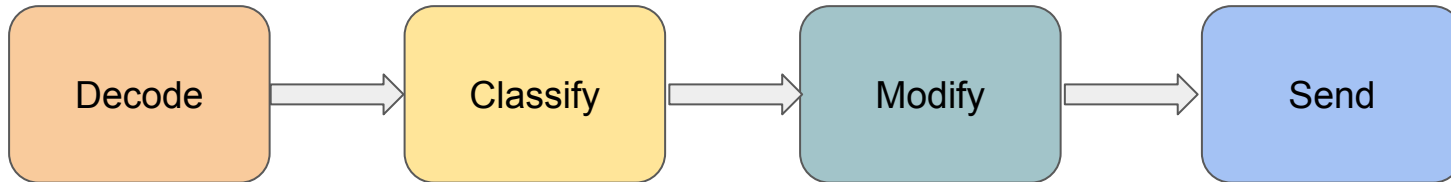
- Virtualization of compute, storage and now *network*
- OVS is a key component
- OVS data plane expressed using P4
- P4 to VHDL to automate FPGA programming

# P4 pipeline

NETCOPE TECHNOLOGIES

# Goal for NFV deployments