



Ethernet switch latency

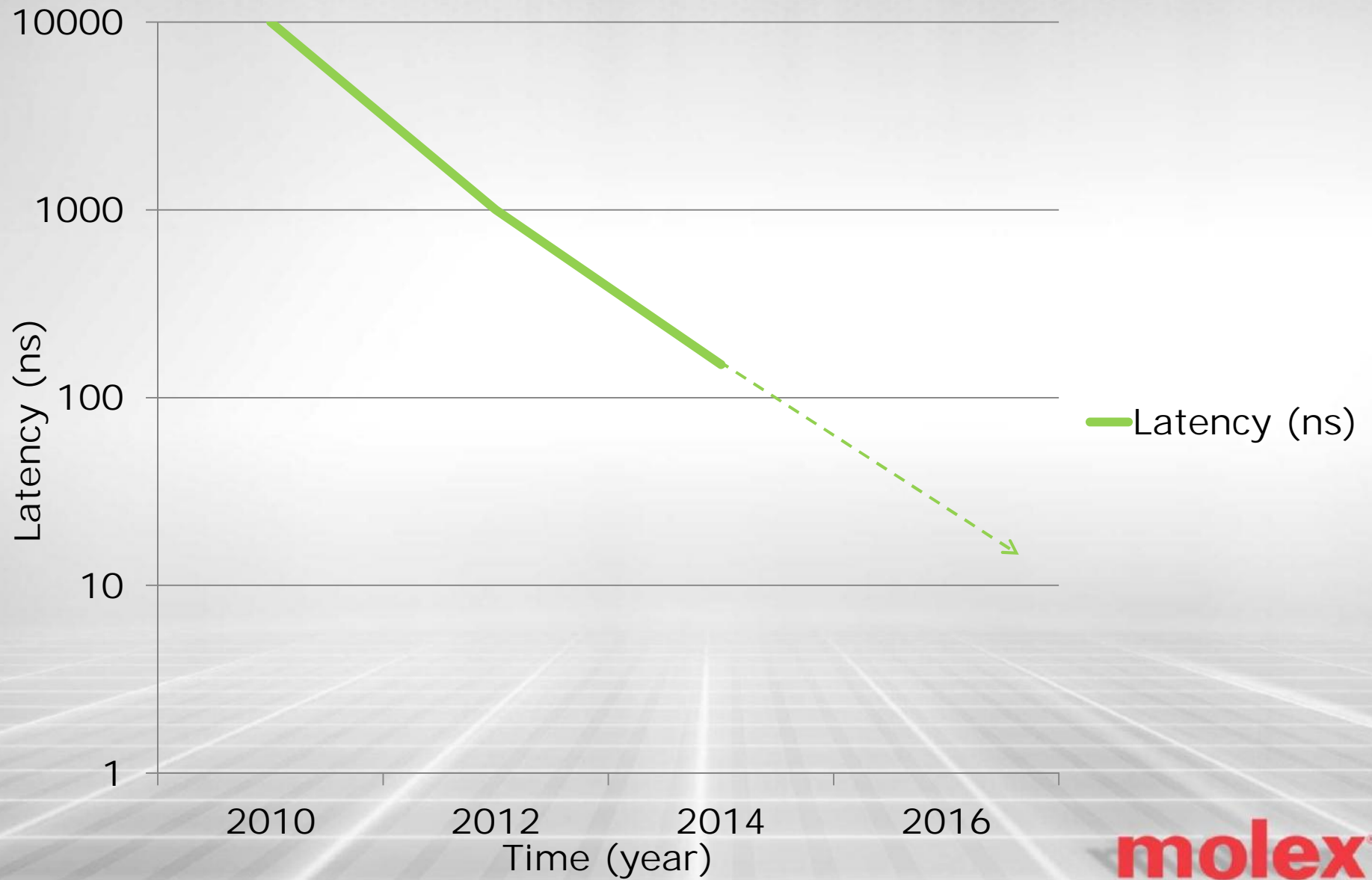
The market is demanding it
We need to deliver it.

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History of Ethernet switch latency



What is the broad market potential of low latency?

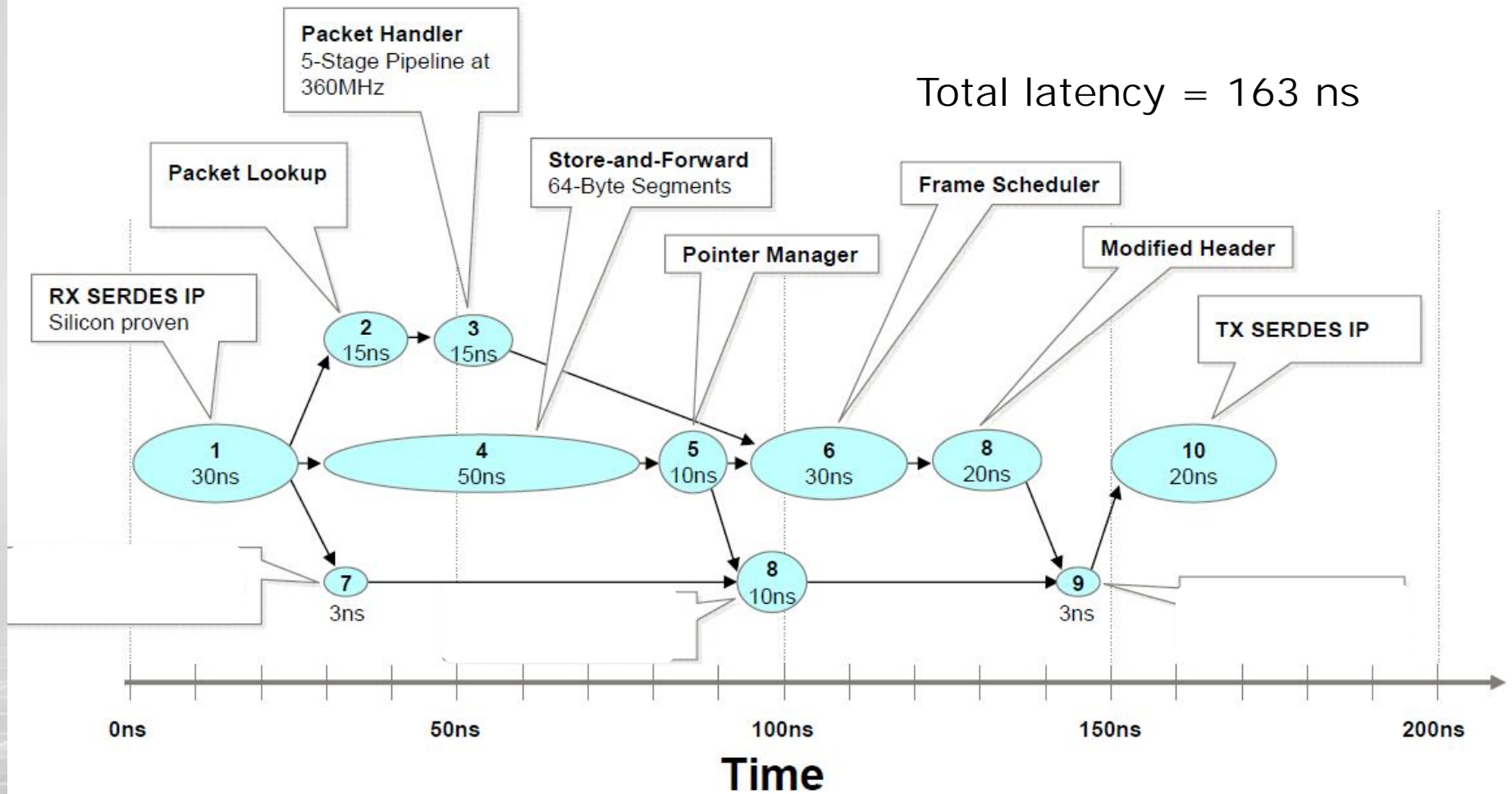
- A 10 Gigabit Ethernet switch with latency of 190 nanoseconds vs a competitors latency of 380ns:
 - “That business [means] billions of dollars in revenue”
- A 40 GbE switch offers latency of 350ns for Layer 2 and 3 forwarding.

What else can achieve low latency?

- › 10GBASE-T latency is about 2.6 microseconds per link due to more complex encoding schemes within the equipment."

Switch latency components today

Total latency = 163 ns



Predictions on 25G switch latency

- › 25G ethernet switch = 2.5x faster
 - $163/2.5 = 65\text{ns}$
- › 25G FEC latency = 82ns
 - http://www.ieee802.org/3/25GSG/public/adhoc/architecture/ran_081214_25GE_adhoc.pdf
- › = 2.26x latency with FEC vs no FEC

Conclusion

- › The technical challenges are minimal, the market potential is huge
- › Lets avoid a fractured market:
 - 5m KR FEC
 - 3m Base-R FEC
 - 2m No FEC
 - 3m No FEC (specified outside of Ethernet)
- › Support 3m No FEC!!