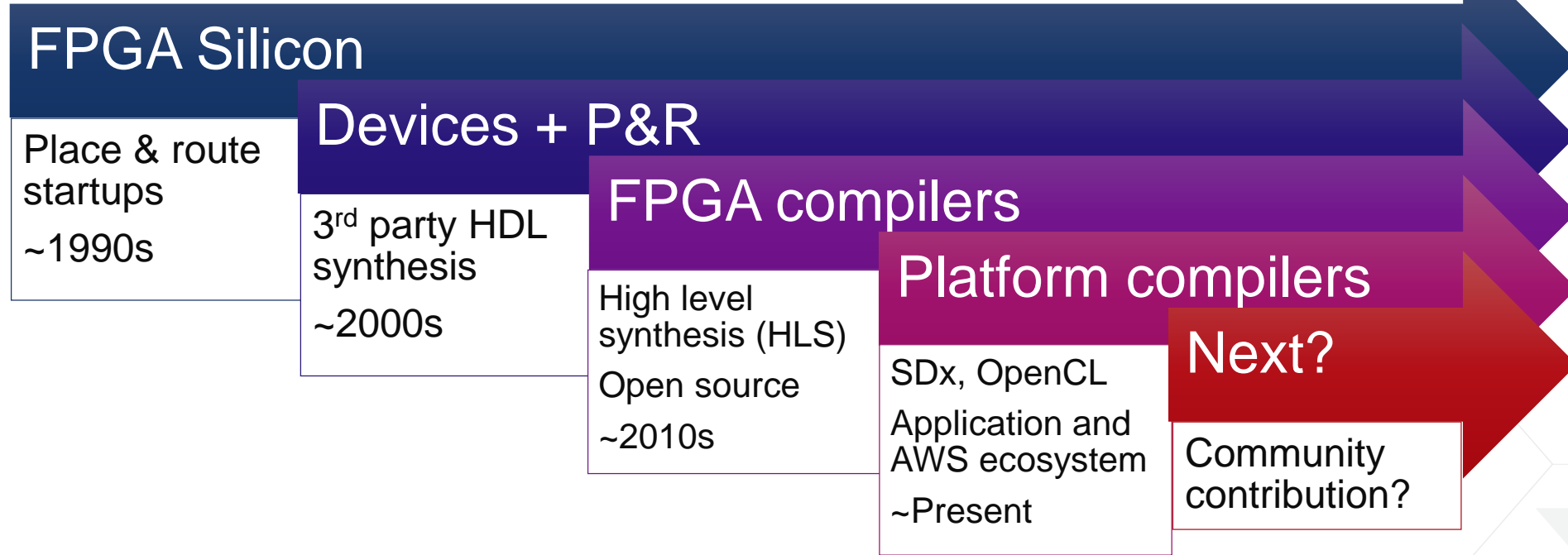


Enabling FPGA Domain-specific Compilers through Open Source

Chris Lavin and Alireza Kaviani
Xilinx Research Labs
29/MAR/19

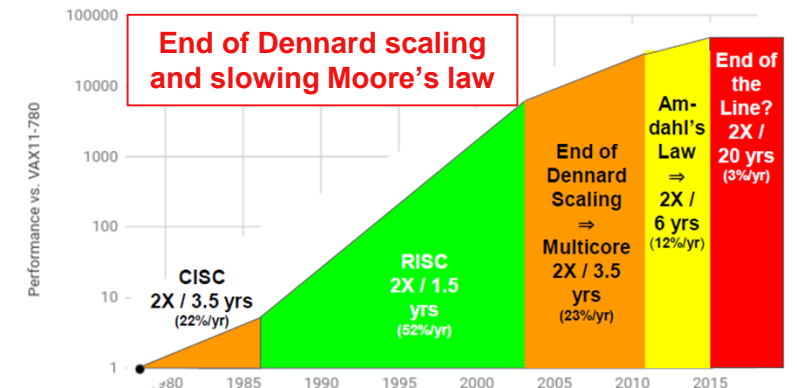


FPGA Industry and Community Dynamics



- > Continuous industry and community engagement
- > The Age of Domain Specific Architectures
 - >> Achieve higher efficiency by tailoring the architecture to characteristics of the domain

40 years of Processor Performance



Based on SPECintCPU. Source: John Hennessy and David Patterson, Computer Architecture: A Quantitative Approach, 6/e. 2018

RapidWright Open Source Framework

> Targeted opportunities

- >> Stencil-based implementation
- >> More than an order of magnitude faster compile time
- >> Near-spec performance
- >> Academic incubation
- >> Enabling domain specific optimizations

