

Good Old Days: EDA Then and Now

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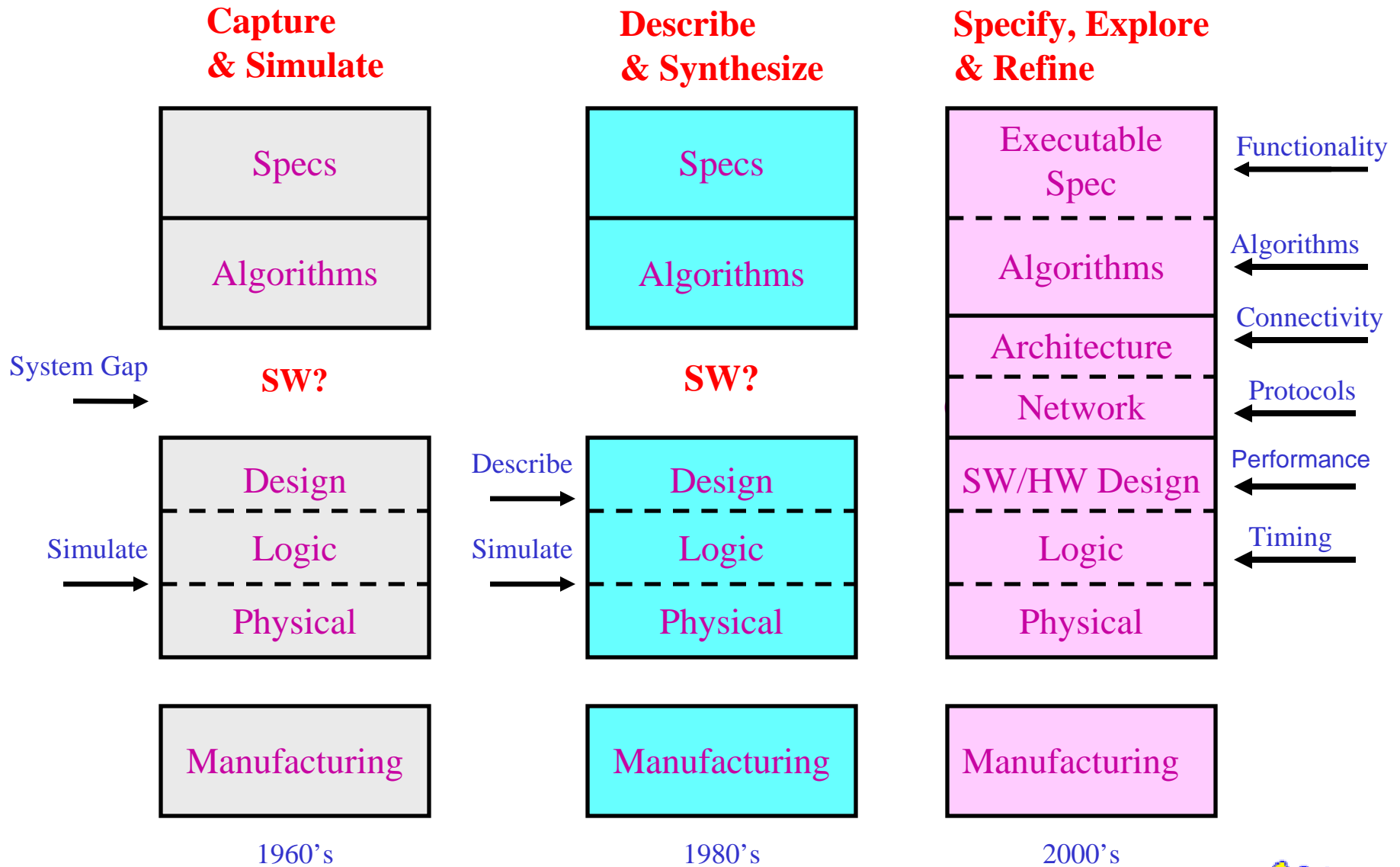


Outline

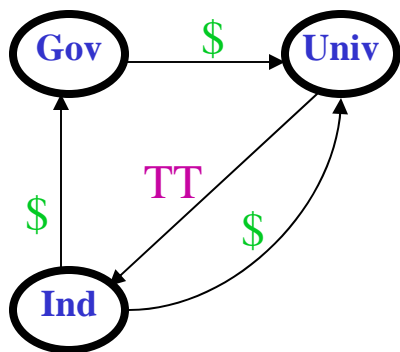
- **EDA History in One Slide**
- **Where is the Money?**
- **Top Success list**
- **Top Flop list**
- **Top Dream list**
- **Wisdoms from the Floor**



EDA History in one Slide

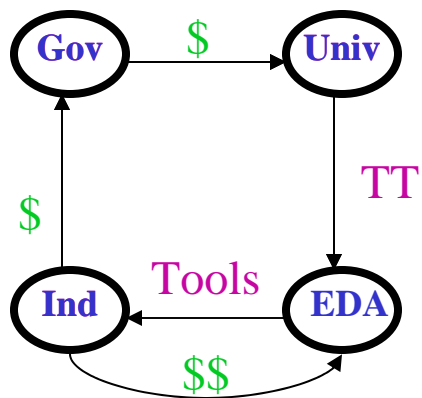


Where is the Money?



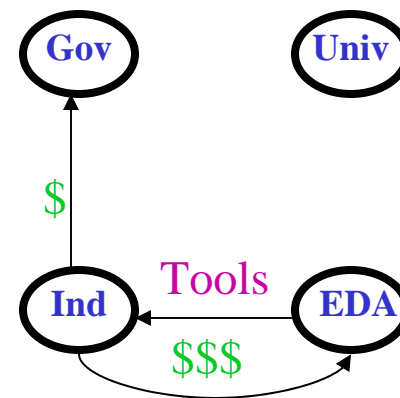
1960s

Happy in Paradise



1980s

Start of Success Story



2000s

Happy Ending



Top Successes List

- **Logic Synthesis**
 - Changed the design flow from “do it” to “spec it”
 - Synthesis really works
- **Standard Cells**
 - Ended everyone-is-layout-designer era
 - Moved design-flow to the next level
- **Spice Tool**
 - Universities can be useful
 - CAD tools can help
- **TTL logic**
 - Introduced the concept of IP technology
 - Lego blocks concept



Top Flops List

- **VHDL language**
 - Good idea went wild
 - Language defined design flow
- **IP industry**
 - Design-flea-market concept
 - No infrastructure, no standard
- **VLSI Education**
 - Students will make chips
 - Step backward from system design
- **Silicon Compilation**
 - Everything can not be automated
 - Too complex for correct-by-construction



Top 4 Dreams List

- **Anything with Words Framework, Common, Unified, Meta**
 - Putting all the buzz words together is not a good strategy
 - Except for getting papers accepted by DAC
- **Deliverables by Committee**
 - Good committee never agrees
 - Agreeable committee does not deliver
- **Standardization Initiatives**
 - Make sure our standard gets in
 - Find out what competition is doing
- **Government initiatives**
 - Get everyone involved
 - Run out of money after that

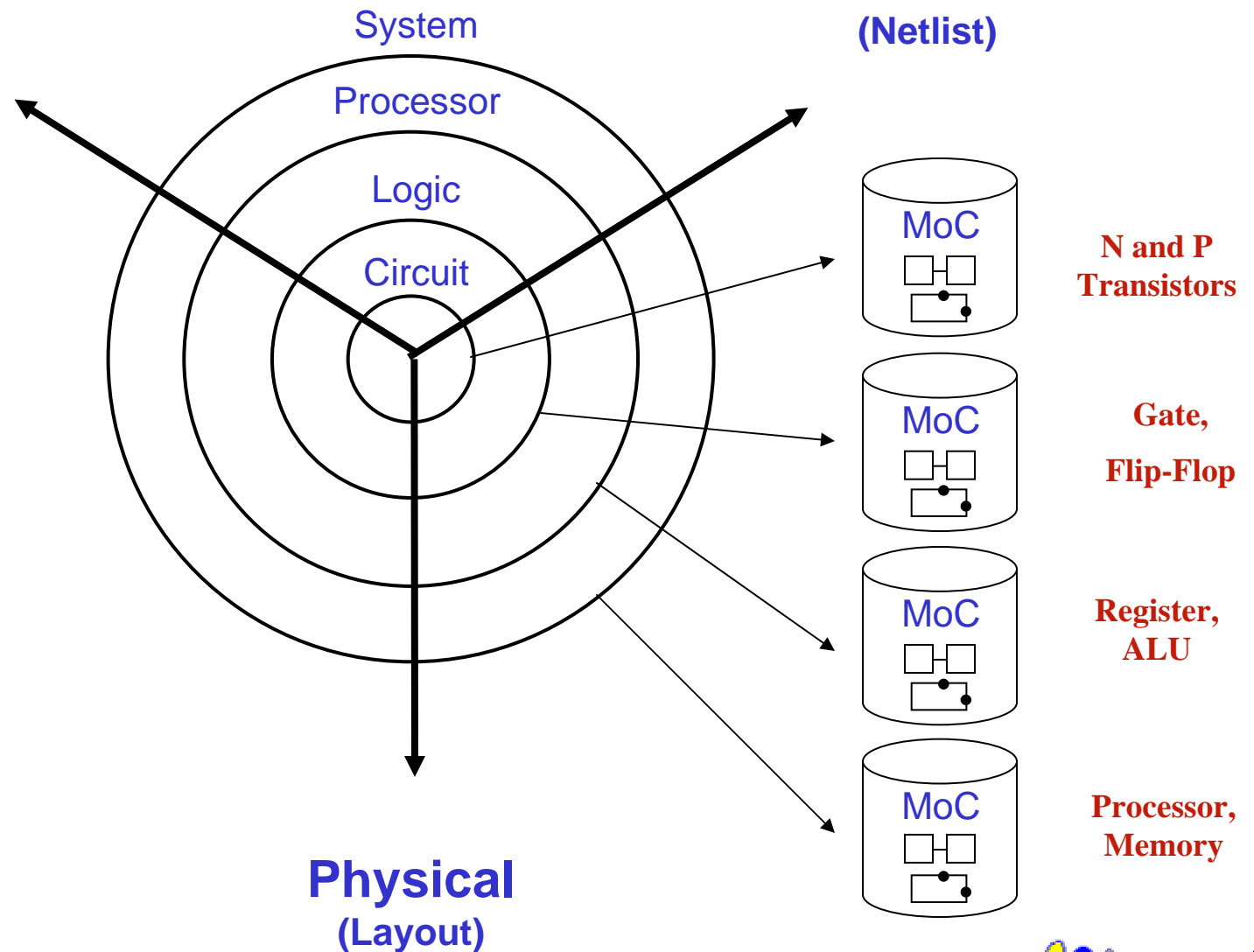


Keep it simple

(2 components, 3 models, 4 levels)

Behavior
(Function)

Structure
(Netlist)



Wisdoms from the Floor

- **Academia:** Start teaching SW and HW together
- **CAD research:** Semantics before syntax
- **DAC:** Cancel CEO panels
- **DAC PC:** Reject papers with 3-line titles
- **EDA:** Get a new life (with software included)
- **Government:** Send money, do not ask questions
- **Industry:** Get your own design flow
- **Bill Joyner:** Lets go to the DAC party

