

How to Find Research Topics in Computer Science

Kohei Ichikawa
ichikawa@is.naist.jp

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Speaker: Kohei Ichikawa (市川昊平)



How to Find Research Topics?



A famous phrase of
David Wheeler:

*All problems
in computer
science can be
solved by
another level
of indirection*

All problems in computer science can be solved by another level of indirection

but that usually will create
another problem

An example at that time....

Pointer



Variable: a



func(a)

{10, 11, 12,...}

{key=>"aa",

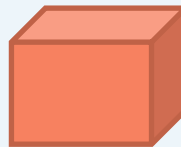
value=>"bb",...}



Variable: a



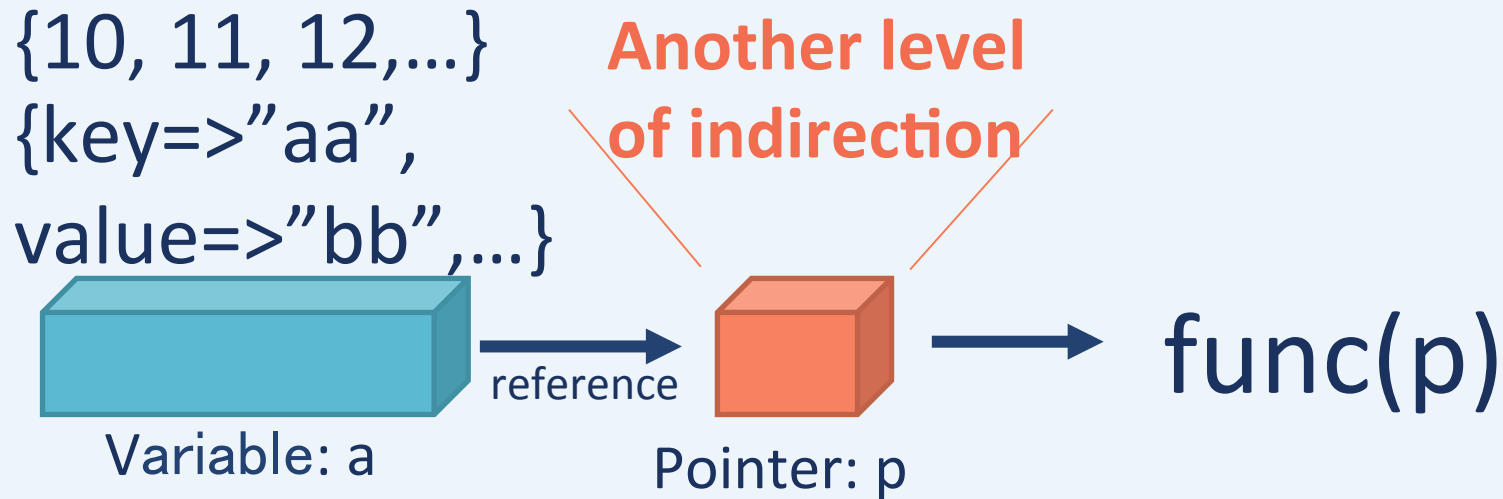
reference



Pointer: p



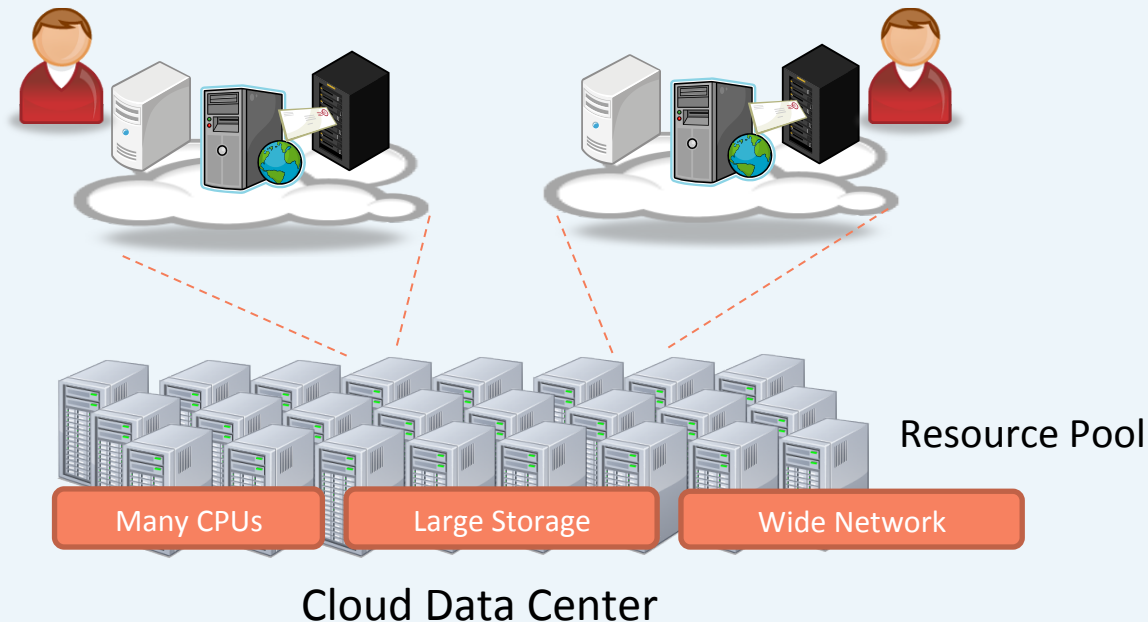
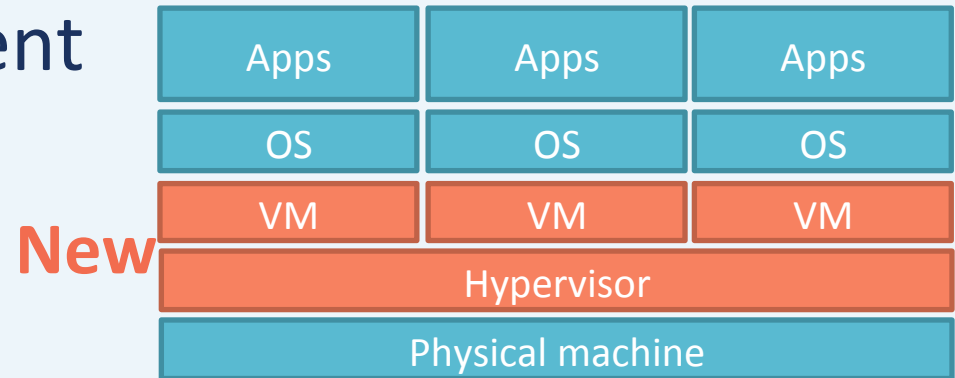
func(p)



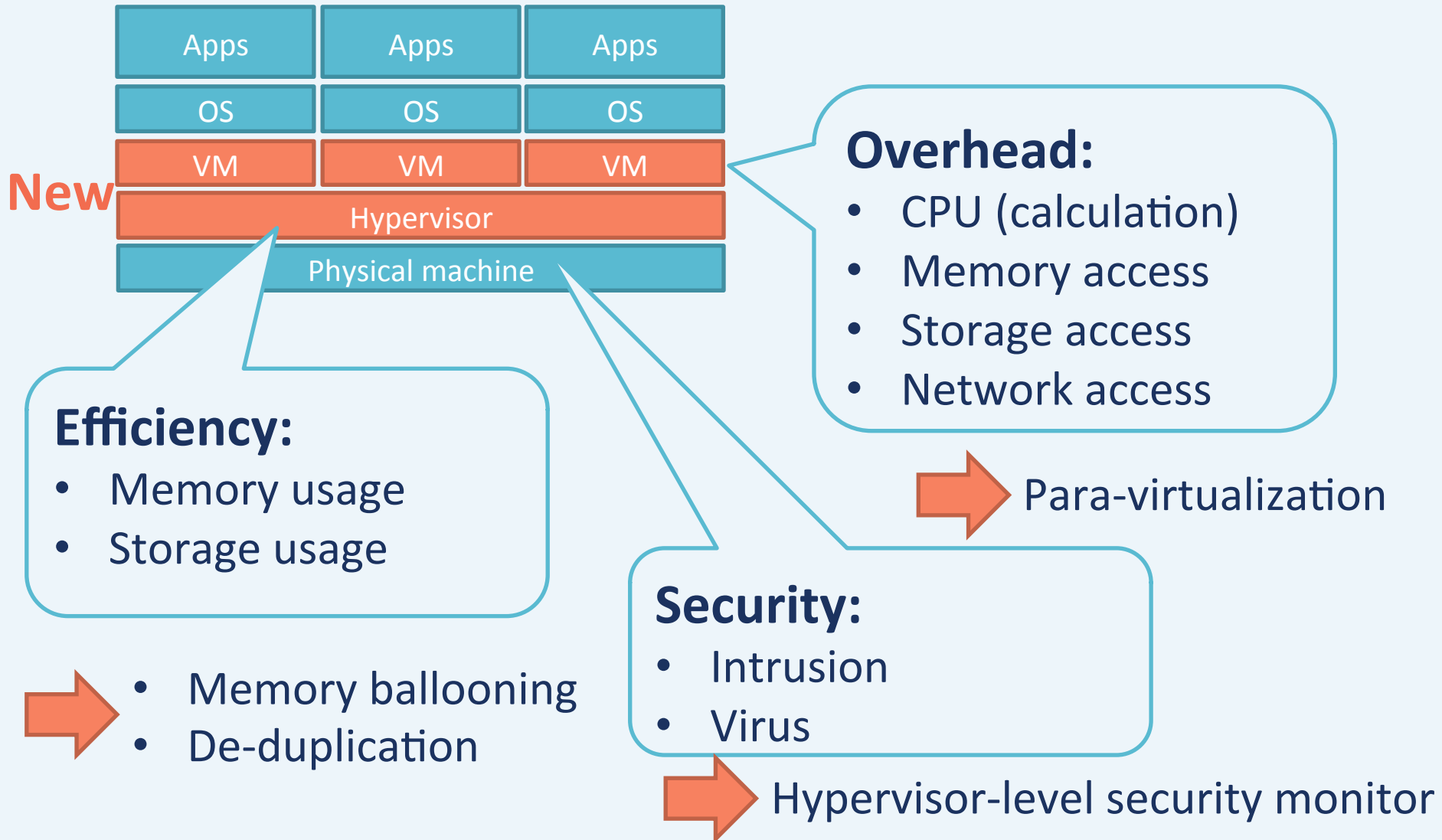
- Advantage:
 - Easy to pass a large dataset
 - Allows the func to modify the original data
- Disadvantage:
 - Introduces improper memory access & operation

Virtualization

- Programmable control for resource assignment
 - Dynamic assignment
 - Automation
 - Improve utilization



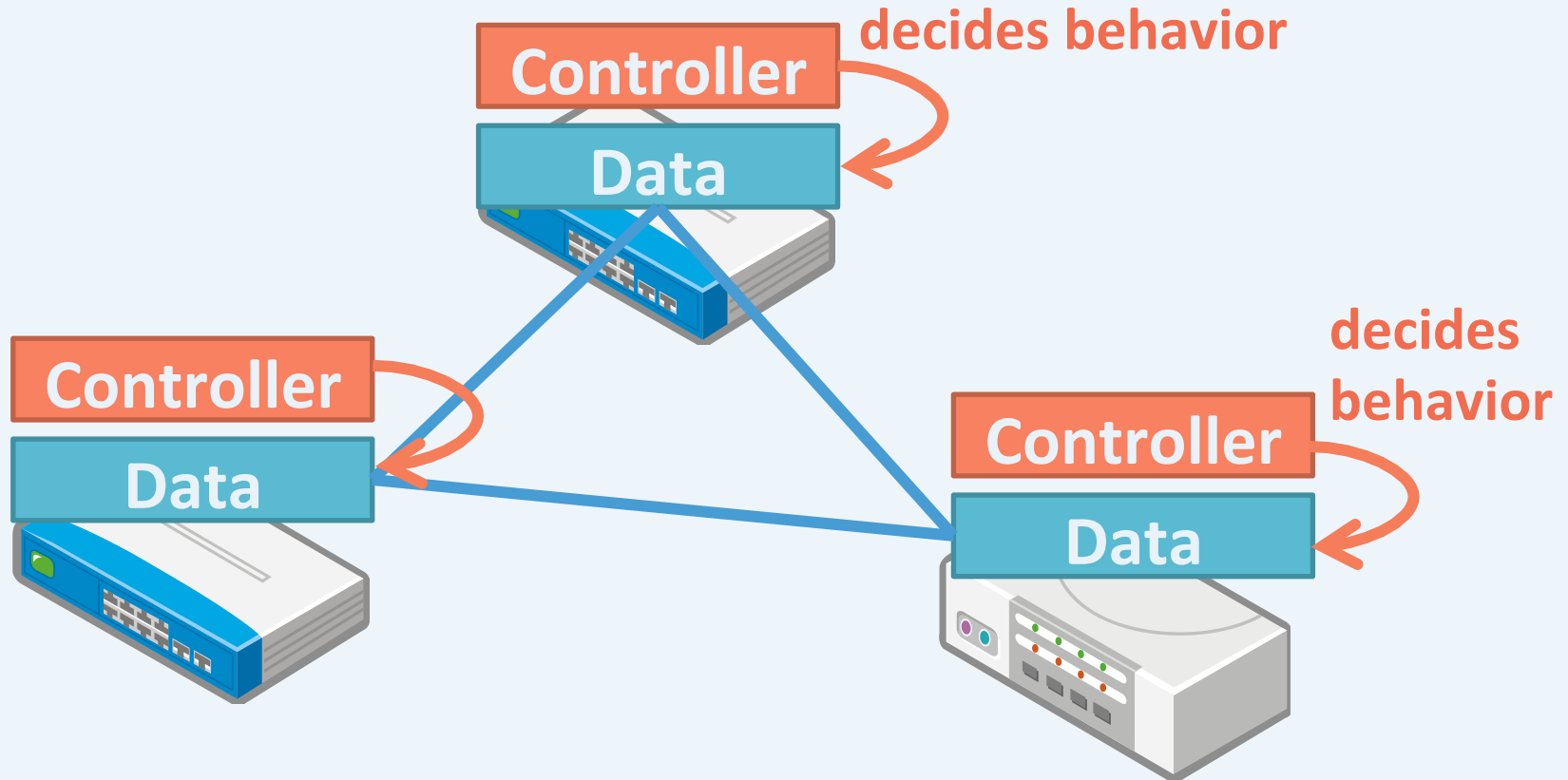
Another problem



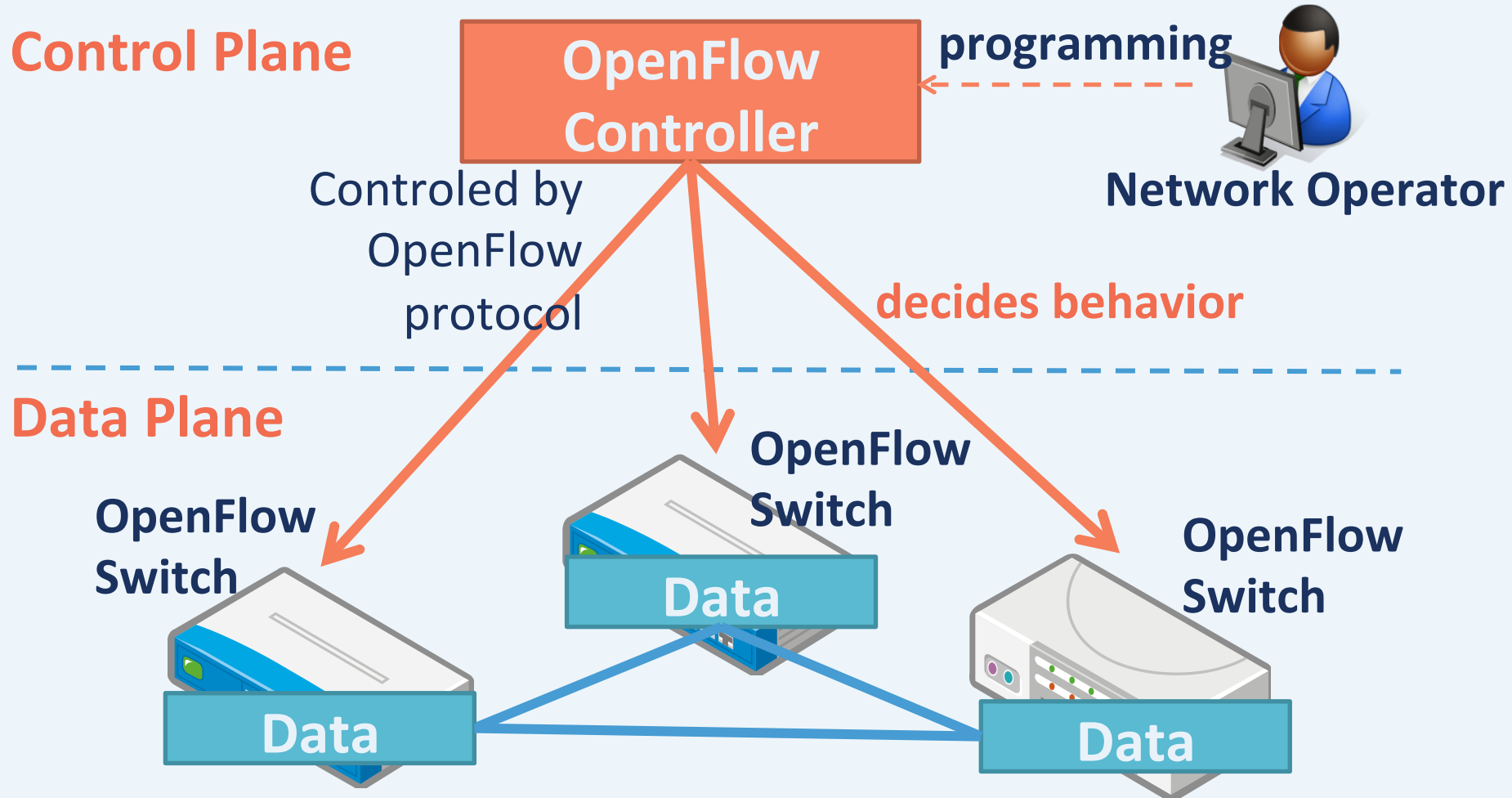
Every problem creates new research topics

SDN (Software-Defined Networking)

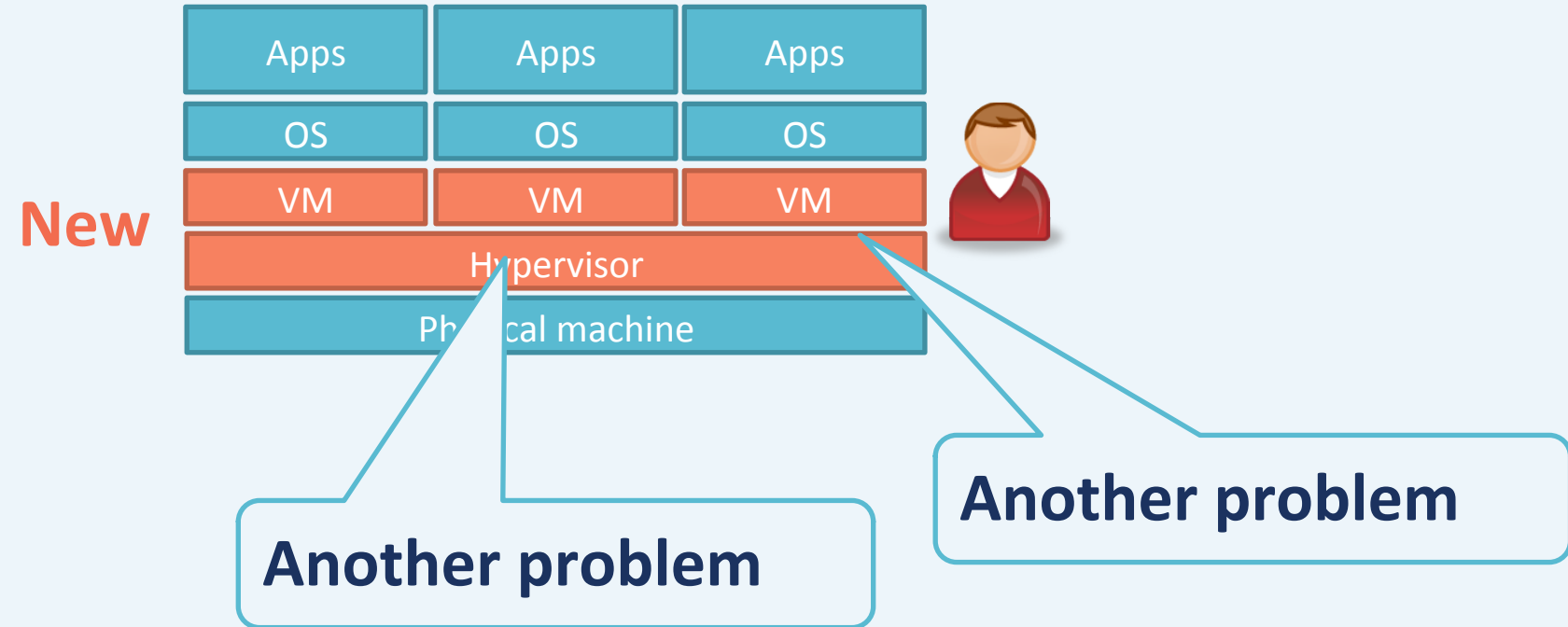
Before OpenFlow



SDN (Software-Defined Networking) After OpenFlow



Finding research topics



- Find what kind of indirection layer is proposed to solve a problem
- What other problems are introduced by the indirection layer