Are New Languages Necessary for Multicore?

David I. August

Department of Computer Science
Princeton University

Liberty Research Group
THIS is the Problem!

Graph Courtesy Mark Oskin
Why New Multicore Languages Will Fail

1. Money is earned by relieving customer pain

2. Programmers adopt new programming models

3. Legacy code

4. The Market: $1,152 Billion in SW + IT Service vs. $138 Billion in HW

5. Parallel programming is more difficult

6. Parallel programming models have longevity issues
Programmers can’t be expected to parallelize that last few percent

“Sequential Portion” – the part of a program that frustrated the programmer
Automatic Parallelization is Impossible, Right?

Naysayer Arguments:
• Decades of automatic parallelization work a failure
• Programs have too many dependences
• Analysis not powerful enough

Reality:
• This is not the same problem: Multicore does not need to be multiprocessor on a chip!
• ILP research more relevant than old school automatic parallelization
• Automatic parallelization is a reality today.
Threads run on multicore model with Itanium 2 cores.
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