The standard introduction of programming to Computer Science students teaches them to assume that any instruction in their program will be immediately executed by the computer. As computers keep executing an ever growing number of instructions in parallel, this introduction needs to be generalized for parallel execution of instructions. The generalization Uzi Vishkin has advocated since 1979 is: *indefinitely many instructions that are available for concurrent execution execute immediately*. This generalization is very powerful, as some parallelism can be observed in algorithms for practically every program. His work, along with the work of many colleagues, has demonstrated the utility of this generalization in algorithms and programs. His work also demonstrated feasibility of building the needed hardware. However, the unfortunate reality is that vendors are yet to provide hardware that supports effectively this simple generalization, forcing programmers instead to choose between giving up the performance benefits of parallelism, or work exceedingly hard to exploit these benefits.

These much-too-difficult-to-program-than-necessary systems are the main reason for missing the grand opportunity of taking advantage of parallelism for achieving quantum leaps in information technology applications: 1. The investment needed for developing new parallel programs for current hardware is too high; and 2. Making a business case for the application innovations that the better-engineered hardware would bring about requires a leap of faith; namely, that applications will follow. However, normally applications tend to follow, rather than precede, availability of hardware.

Now that commodity computing has been greatly extended from desktops and laptops to tablets and smartphones, and competition among vendors is tighter, the conditions for advancing this generalization are improving: 1. Vendors will need to become far less risk averse to remain competitive. 2. Vendors have very few alternatives for differentiating their products, and this generalization provides a clear opportunity.