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As most of us have experienced as part of our own personal history, the World Wide Web has become more and more ambitious. From the customisable rendering of a simple markup language, to increasingly interactive web pages, to a dynamic page model that allows all sorts of desktop-like applications to run in modern web browsers. Beyond the immediate questions of where all the computing takes place, who controls it, and what the programs themselves have become, there is no way to understand the future implications of this transition without examining the technical history of the intangible back-end development involved, i.e. cloud computing. From monolithic data centres, to a rentable Infrastructure as a Service (IaaS), to containerisation as a result of the Platform as a Service (PaaS), to Serverless, ephemeral functions.

While pushing further and further to the Edge of responsiveness and 'closer to the user' computation, we are facing an inherent technological logic that demands for a new industry-wide standardisation for programs that can run anywhere which will eventually sunset JavaScript, that premature hack (in place of Scheme) gluing both developments together. At the dawn of WASM breaking free from the browser towards the Web Assembly System Interface (WASI), a no less premature attempt was made to reinvent the source code oriented API of POSIX. Interestingly, however, since WASM isn't just aimed at the web, nor is it an assembly but a binary format for a sandboxed portable stack machine to which a whole lot of languages can be compiled, so that history, for once, might not repeat itself but break through to a truly innovative way of distributed computing learning from the design flaws of the Java Virtual Machine (JVM) and doing away with both the POSIX abstraction of 'a process' and the UNIX philosophy of 'everything is a file' just alike. Instead, we see the rise of a highly modular, capability based component runtime with a strongly typed interface that promises to scale well and has the ambition to meet the needs of IoT microcontrollers all the way to the edge of the cloud.

Given the ambitious context of Alan Kay's call to "invent the future", a less immediate but all the more pressing question would be whether these recent developments bear the potential to overcome the hard barrier of all previous virtual machines and thus enable us to envision the redesign of reflection in such a way that it might lead us to a new kind of Smalltalk.