Plugging into the Pervasive XML Infrastructure

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Abstract

In 1998 the industry got behind a common vision of interoperability for systems and data using XML. The web (HTTP/HTML) connected millions of users to each other as well by presenting information they needed - both at work and from home. The next logical step is to connect systems together and break down the stove pipes of information and business logic that exist to unleash an entirely new wave of productivity gains.

In this talk I will trace the march of computing that has led to incredible productivity gains over several decades; draw parallels to the invention of electrical generation facilities and the subsequent building of the electric grid that provided power for all to harness and call out the challenges that still lie ahead of us. I start by pointing out that this march is a continuation of a longer journey that we started when the first data processing systems where put in place to automate business functions like payroll processing in the 60's and 70's. The introduction and widespread market acceptance of PCs and standardization of network protocols like TCP/IP and SMTP in the 80's extended this platform by connecting clients to back office applications. But this platform stopped at the boundaries of the enterprise and often at departmental boundaries.

In the 90's HTTP/HTML on top of TCP/IP provided a common protocol at Layer 7 of the stack and allowed stitching together of a vast platform that broke down existing notions of computing. It is interesting to note that almost simultaneously quantum improvements in relational database technology made RDBMS the de-facto standard for storing application data. We all know what happened next. But the benefits of the over investment is paying off as XML and SOAP is allowing work to be segmented into consistent bundles and shipped around the globe to be performed at places where it is most cost effective to perform this work - much like how electricity grids can move power from where it is abundant to where it is needed. Globalization of services is a direct result of this change.

We at Microsoft believed in 1998 that XML based interoperability must be built into products from the ground up for our vision of Connected Systems to materialize. As a result we have helped move that vision forward by building XML capabilities into all our products (client and server, desktop and handheld) and our development tools. XML is now pervasive; documents are both human-readable and can be processed by machines, and the data contained in these documents are now platform independent and can be processed on any platform by any application. It is now up to creative people all over the world to build a new generation of end-user applications and appliances that exploit the power and ubiquity of XML technology built into the infrastructure grid.

Finally I will present next set of challenges I see ahead of us and present some ideas on how we can address them together. I will demonstrate some technologies we have shipped and working that will illustrate how all software developers, not just XML experts, plug into the power that the XML infrastructure provides.

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1. Keynote Talk

This was a keynote talk and no paper was prepared for the proceedings.

Biography

Dave **Campbell**

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David Campbell is the Microsoft SQL Server General Manager of the Data Engine and Access Technologies. Dave has been professionally wrestling with data for close to 20 years after spending the first several years of his career attempting not to inadvertently break things while developing robotic workcell software. During his data foray, Dave has developed PLM and Engineering Data Management software for a division of Lockheed and then, in 1990, he joined Digital Equipment Corporation and worked on both their CODASYL database product (DEC DBMS) and their relational database product, Rdb. Since 1994 Dave has been working in the SQL Server team at Microsoft where he has held the role of Developer, Architect, and various management roles. Currently, David oversees the product development of XML, core relational engine, Data Access, and replication technologies. Dave holds several patents in the data management, schema and software quality realms. He is a frequent speaker at industry and research conferences on a wide variety of data management and software development topics.

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Soumitra Sengupta is a Product Unit Manager in the SQL Server organization at Microsoft, responsible for the WebData XML team that implements the core XML technologies. Previously he was co-founder and CTO of B-Bop Associates, which produced a native XML interface on top of relational DBMS.