

STREAMING: THE EMERGENCE OF A NEW TECHNOLOGY TREND

Reprinted from
the May 2005 issue
of the Hurwitz
Newsletter

by Robin Bloor,
Partner

New types of applications are suddenly emerging because of increased scalability and speed of everything from CPUs, memory, disk, and networks. This is in keeping with the evolution of technological changes over the last several decades. For example, when relational databases were first introduced, they were too slow for transaction processing; over time, however, they matured to handle on line transaction processing. Today, data warehouses containing terabytes of data have become manageable, supporting a wide variety of business intelligence software offerings. Networking, in combination with escalating computer power, enabled web sites to support huge transaction rates.

At Hurwitz & Associates, we see the next evolution of this process. At the beginning of this year, the emergence of streaming technologies - software that manipulates or processes streams of data in one way or another - caught our attention. So far, there are two quite distinct technologies in this space:

- Development environments for event stream processing (ESP)
- Device streaming (in conjunction with virtualization)

The Dawn of ESP

The first of these, ESP development environments, can be thought of as rapid application development for “real time” applications. Trading systems in the financial sector have been implementing ESP for quite a while, but they were hand-coded by highly skilled programmers. Such systems take price feeds from financial markets and analyze them in flight, looking for patterns or comparing them with historical feeds. These systems then automatically execute trading strategies based on the situations they have identified in the event stream of prices.

The need to process event streams that consist of thousands of events is not confined to the financial sector. Hurwitz & Associates does not see this streaming as a niche opportunity. There are a variety of industries where this type of streaming makes sense. For example, the need is particularly strong in the telecommunications industry and various utility markets. It is also a natural aspect of RFID systems, especially when such systems are tracking the location of goods in complex supply chains. There are also potential applications in payment



“...Progress Software has become the market leader of the ESP market.”

systems, for detecting fraud or carrying out credit checks in real-time.

Consequently, various purpose-built development environments for ESP have emerged and now there's a fair amount of marketing noise surrounding them. We have identified several emerging companies that are focused on this market. Particularly interesting is StreamBase, a new company formed by Michael Stonebraker. Stonebraker, the father of the Ingres and Illustra databases, has masterminded the development of StreamBase - a streaming database with its own SQL extensions and rapid application development environment. Stonebraker maintains that processing streams needs a purpose-designed development environment.

However, this isn't the only game in town. The market leader is Progress Software which acquired Apama, a rapid development environment that is already deployed in many trading operations in Europe and is now being merged with Progress Software's ObjectStore database to create a symbiotic product set that provides both development environment and database platform. Therefore, by default, Progress Software has become the market leader of the ESP market. Other companies emerging in this space include iSphere and Syndera. We expect that others will join the fray in the coming months.

Device Streaming

Device streaming, the other emergent streaming technology, involves a wholly different aspect of streaming. Companies involved in this market include AppStream, Ardence, Endeavors, and Softricity. These companies have quite distinct products, but the underlying idea is the same for each: to stream application environments (or even the whole OS) to the desktop, distributing the software and processing load between the device and the server from which it is streamed. The selling point of all of these offerings is the ability to reduce desktop administration costs dramatically. In effect, these products virtualize the PC, distributing to the desktop only the software that is required and managing the virtualization activity from the server.

A New Software Architecture?

The reason such streaming products have only just emerged is that this distributed software architecture was not viable until gigabit networks proliferated. Without gigabit networks, it would not have been possible to load applications fast enough. With these streaming products, there is no

“What changes is that the desktop’s total cost of ownership (TCO) goes down significantly.”

significant difference for the user between a PC running in stand-alone mode and a virtualized PC. What changes is that the desktop’s total cost of ownership (TCO) goes down significantly.

These new developments provoke the question: “Is a new distributed software architecture emerging?” We believe that the answer is “yes.” Previously, software architecture ideas were constrained by the limited ability to move executable components around a network. Small components could be moved, but large ones took too long. What has changed is the size of the components that can be moved and the amount of processing that can be done at any node. This makes the virtualization of whole environments possible and it makes the dynamic movement of fairly large amounts of data possible. At Hurwitz & Associates, we expect other new kinds of products to emerge that take advantage of this newfound freedom.

© Copyright 2005, Hurwitz & Associates. All rights reserved. Reproduction of this report in any medium is expressly prohibited without prior written permission of Hurwitz & Associates, the sole copyright holder. For more information, please contact Hurwitz & Associates at: www.hurwitz.com, 470 Totten Pond Road, Waltham, Massachusetts, 02451.