North Carolina Technical Experts Council Hosts State Leaders on Smarter Cities

The North Carolina IBM Academy Affiliate was delighted to host several North Carolina (NC) State leaders for our Smarter Cities Spring Symposium on April 13. Our agenda included a presentation from Dr. Bryan Setser, NC Virtual Public School, on the value and challenges of delivery of virtual education for the 2nd largest virtual public school in the US. Eric Lamb, Director of Transportation for the City of Raleigh, NC, and Joe Milazzo, PE, Regional Transit Authority spoke on the success and future strategies of transportation for North Carolina. We also heard from Sean Harrison, Director of Alliance Medical Ministry discussing the challenges for Health Information Exchanges. The NC TEC is led by Craig Nygard, GTS and Vice Chair, Rosalind Radcliff, SWG, who hosted this event and plans to use it as a stepping off point for future activities. This event also provided an opportunity to announce and recognize the RTP Inventor of the Year, Will Pagan.

William Pagan, Inventor of the Year

In addition, we hosted a technical poster session with a variety of topics crossing the divisions and technical interests of our membership. The event was judged by IBM Academy members Bala Rajaraman, DE, SWG Tivoli, Julie King, DE & VP SWG Strategy, Maurice Bland, DE, STG System x; Steven Hunter, DE in Research and Boyd Dimmock, DE, STG Industry CTO. The conference attendees were challenged to network, learn and to give their input on the choice of best poster. The winning posters included:

1st Place: Continuous Availability Services

Herbie Pearthree, STSM, Global Cross Services Technology Integration, ITD

Abstract: We deliver www.ibm.com's most critical public facing web applications, which require continuous availability from 3 geographically-dispersed datacenters; Raleigh NC, St. Louis MO, and Boulder CO, and have delivered using this model since 1998. www.ibm.com has been continuously available since June 2001 without maintenance windows. To do this, we designed innovative methods that use a combination of IBM hardware and software to provide services that are always available. These same methods can be used for all IBM clients who require a continuous available service.

by Craig Nygard and Boyd Dimmock

2nd Place: The Engineering Challenges of ASIC Design

Brad Marshall, William Rose, ASICs Field Design Center, STG

Abstract: Located on the second floor of building 062 in Research Triangle Park is a department of 15 engineers who face some of the most complex engineering problems in order to produce an IBM ASIC product. ASICs are integrated circuits that provide much of the function behind today's electronic products, such as cell phones, video games, PCs and routers. In the mid 1990s, IBM entered the commercial ASIC business to help keep our semiconductor fabrication plants (fabs) full, and to reduce the overall cost of operation. Today, ASICs is a multi-billion dollar business, composing a major part of the System and Technology Group's Microelectronic strategy. IBM now has ASIC design centers located around the world. These design centers help IBM customers convert their designs from an abstract concept into a reliable product that can be manufactured in the IBM Semiconductor fabs in Fishkill, NY and Burlington, VT. Converting the customer's RTL-level design into a

physical implementation suitable for a product, requires the resolution of a number of complex engineering problems. This poster session presents an overview of some of these engineering challenges, and includes the topics of testability, timing, physical placement, functional behavior, wiring, noise analysis, processing resources, power consumption, and worldwide communications among engineers.

3rd Place: Selling Customer Access At The POS Terminals – A Web to Store Transformation

By Phuc Do, STSM, Justin Pierce, Retail Store Solutions, STG

Abstract: Traditionally, point-of-sale (POS) terminals are used to sell physical products to customers. As part of selling these products, retailers are involved in either making or procuring these products. They need to ensure that a robust supply chain, warehousing system, and a comprehensive store inventory system are in place to keep the products available for their customers. These support systems end up costing retailers a significant portion of their operating budget and, as a result, retailers are intently focused on saving costs on their retail infrastructure, including POS terminals, to increase their bottom line.

Recently, giant retailers have started to explore ways to leverage their sizable customer set to generate revenue using new technologies from IBM. One way to achieve this goal is to allow third-party service providers to offer their services, products, and advertisements on the retailer-owned POS terminals. In other words, giant retailers will "rent" the POS terminal's customer-facing displays to third-party service providers, opening up access to enormous customer sets. Customer access does not need to be supplied, warehoused, or replenished in a traditional way and, as a result, the revenue generated using this method can contribute significantly to the retailer's bottom line. This presentation explores this exciting new way of using POS terminals, its underlying architecture, and its business model.

Spotlight on Affiliates (continued)

People's Choice Award: Project BigSheets - Analyzing web-scale data in a spreadsheet

By Anil Chawla, Emerging Internet Technologies, SWG

Abstract: Project BigSheets is a browser-based do-it-yourself (DIY) workbench for performing analytics on large scale data. BigSheets allows business users to analyze petabytes of structured and unstructured data through a familiar spreadsheet-like web interface. Users can analyze data from a variety of sources including data crawled directly from the web.

Underneath the covers, BigSheets leverages the open-source Hadoop/Map-Reduce project (http://hadoop.apache.org). Hadoop provides a sophisticated framework for storing and processing massive amounts of data in a distributed computing environment. It is able to ingest data in any form (whether structured or not), as well as scale horizontally using commodity hardware to meet increased demands. Hadoop has become a key technology for Big Data analysis and Project BigSheets demonstrates IBM's leadership in this space.

One of the key questions facing IBM's Smarter Planet initiatives came from the floor, "What about privacy?"

Extracts of Keynotes

Smarter Cities

Craig Nygard, Chair, NC TEC

Craig presented three aspects of Smarter Cities (Education, Transportation, Healthcare) to set up the following presenters. Additionally, Craig reviewed the input from NC TEC in each of these areas. In December 2009, NC TEC members contributed ideas to have a chance at presenting an idea at the Institute for Emerging Issues in February, 2010. (Ravi Sabhikhi's idea on software defined radio for last mile transport was presented at that conference.) One of the key questions facing IBM's Smarter Planet initiatives came from the floor, "What about privacy?" This issue is arising more and more in Smarter Cities discussions. IBM has produced a product to aid in the attempt to protect privacy, IBM Anonymous Resolution.

Smarter Education

Dr. Bryan Setzer, Chief Executive Officer, NC Virtual Public Schools

Dr. Setzer reviewed his personal history in finding innovations from public schools around the country and merging them into the Charlotte school system. That led him to develop methods for engaging more students in the use of virtual public school curricula to integrate into the spectrum of approaches to education. Dr. Setzer observed that our public schools are still in the industrial model and challenged NC TEC's thinking with a set of innovative approaches to all aspects of education. Check out these sites http://www.thevlc.org/ and http://www.ilabcentral.org/ .

Smarter Transportation

Mr. Joe Milazzo, Executive Director of Regional Transportation Alliance and *Mr. Eric Lamb*, City of Raleigh PE

Mr. Milazzo described his role in lobbying for solutions and showed (in the presentation) the current priority list. The Triangle area, now about 1.5 million people, shows an average of over 31 miles driven per day, greater than the national average.

Smarter Healthcare

Mr. Sean Harrison, Executive Director, Alliance Medical Ministry (AMM)

Mr. Harrison is a former IBMer, but more importantly, a co-founder of AMM. As such, he is interested in the intersection of technology and medicine. Rich Rogers, an NC TEC member and former officer, has worked on medical device standards and brought Mr. Harrison to our attention.

AMM's mission is to provide services to the working poor, a constituency that could diminish greatly with the new healthcare legislation. They are experiencing 13,000 patient visits a year at their facility near Wake Medical Hospital with the support of over 250 volunteers. They have created a simple Health Information Exchange to aid them in their mission. His clientele has limited technology access (30% on e-mail, 40% with internet access in some way and 60% with text capable cell phones).