

Digital Surface-based Mashups for Data and Process Management of the Petroleum Industry

By Valeh H. Nasser and Frank Maurer

The Canadian petroleum industry is a data-intensive industry with many small to large companies operating in its different sectors. Large companies have the luxury of developing their own IT systems while smaller companies have to manage their data and processes manually.

Last summer, the University of Calgary conducted a study of the petroleum industry in collaboration with our industrial partner, Intellog. We interviewed people from the petroleum industry and identified process and data management inefficiencies. As a result of these interviews, we developed a cloud-based prototype which was evaluated in a second round of interviews. The result of this study suggested a great gap in the industry that could be filled by customizable data, process, and interaction management IT solutions.

The developed prototype works both on the iPad and desktop computers. Because of the geo-located nature of industry data, maps are a great medium for searching, browsing,



and managing information. Digital surfaces provide natural interaction mechanisms for maps. In fact, industry people deemed our iPad-based prototype very usable and useful. We think that using larger digital surfaces as a development platform will potentially provide much more utility and usability.

But the story does not end with surface-based interaction patterns. To

provide customization for smaller companies, cloud-based domain-specific mashup platforms can be developed. A cloud-based architecture provides affordable access to technology for smaller companies and mashups provide customization for companies with different sizes, processes, and industrial sectors. The development of such a platform is the natural next step in this research.

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THANK YOU

to everyone who attended the Fall 2010 Workshop and Industry Open House. It was a huge success!

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Interaction on Surfaces Inspired by the Physical World

By Ricardo Lagner,
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As software starts to shift from the traditional mouse-keyboard-monitor setup to integrated multi-touch devices, we can no longer rely on many of the conventions and guidelines of traditional interfaces. This presents a challenge for the design of applications on multi-touch surfaces but also opens new opportunities to make the next-generation interfaces more natural and engaging.

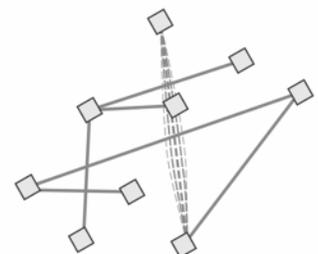
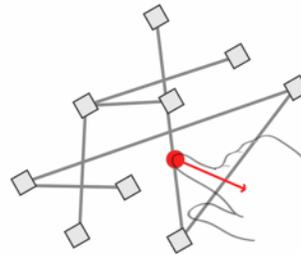
One way to approach this problem is to create interfaces that react in similar ways to the physical world around us. We are exploring this concept in several application areas such as learning environments for children, and information visualization.

The PhysicsBox project is a set of games designed to familiarize elementary school students with science concepts. The three games that make use of physics simulation as a basis for their interactions allow



students to play with an interactive miniature solar system, to use slingshot-style interaction to make billiard balls collide, and to explore vehicle movement fundamentals.

The information visualization project focuses on the exploration of node-link diagrams (a common representation of network information). We developed a set of interaction techniques that allow people to touch and manipulate the edges connecting



the nodes as if they were elastic strings. Edges can be bundled, strummed or pinned in order to detangle the typical edge congestion, and gather a better understanding of the data.

For the full articles go to <http://www.nsercsurfnet.ca/pmwiki.php?n=SurfNet.Papers>.

Research Excellence

For SurfNet contact information please go to:
www.nsercsurfnet.ca/pmwiki.php?n=SurfNet.Contact

Fall 2010 SurfNet Workshop and Industry Open House a Huge Success

Three days of exciting talks, demos, dialogs and social networking resulted in many new ideas, collaboration opportunities and friendships. We had over two dozen demos and videos presented during our Industry Open House to packed audiences from industry, government and academia. The student "madness presentations" were a particular highlight, reflecting the incredible capabilities of the students and the research they are working on. Thanks go out to everyone who participated. Photos are now available on our website.

SurfNet has Strong Showing at International Surface Computing Conference

Surface computing researchers from around the world recently gathered in Saarbrücken, Germany for the ACM International Conference on Interactive Tabletops and Surfaces. From receiving the prestigious "Best Paper" award to participating in 7 of the 32 technical paper and note presentations, SurfNet researchers really did shine!

Details of our accomplishments are on our Blog at <http://www.nsercsurfnet.ca/pmwiki.php?n=Blog.SurfNet-has-Strong-Showing-at-International-Surface-Computing-Conference>

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