

## DualScribble – An Electronic Whiteboarding Tool for the Classroom

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Prof. Michael Radevic has been teaching online classes for Warburg University for the past two years. He likes many of the tools that the Center for Teaching Excellence (CTE) at the University has made available. He's particularly fond of the virtual whiteboard that he uses with his Microsoft Surface Pro 2 computer. He can scribble on it with his pen and his students see his whiteboarding in real-time. Michael knows that his students appreciate the interactivity and they have left great reviews on their course evaluations. One feature he likes in particular is the ability to save and share whiteboards. Instead of erasing the board contents to write more, he can simply create a new "board page". At the end of a session, he saves the boards to JPG files and shares them with his students on the class website.

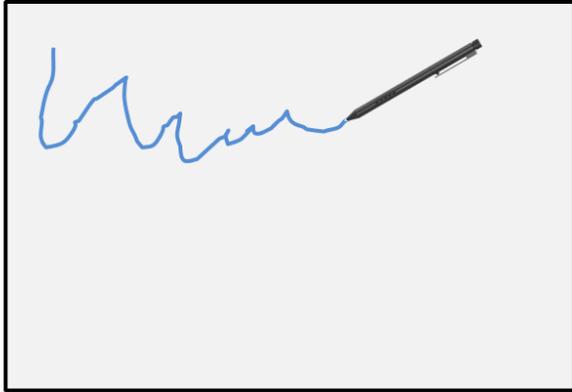
When lessons are difficult, he often "screen casts" ad-hoc lectures of problem solutions using TechSmith's Camtasia. He starts a whiteboarding tool on his Surface Pro and sketches the problem solution as he talks through it. Camtasia records the screen and voice and allows Michael to save it to a distributable video file or upload it to YouTube.

Lately, Michael has been asked to present some of his course material to practitioners at a local mutual fund management firm. Although they have great meeting rooms, the whiteboards in those rooms are really small and Michael does not like flipcharts or presentations that are just PowerPoint. He's also often asked by his workshop participants to send them the whiteboards after – or sometimes even during – the workshop. But all of the whiteboarding tools have significant shortcomings. One of the biggest one is the lack of dual screen support. Michael likes to set his Surface Pro to dual screen mode where the desktop is "extended" to a second screen – generally a projector but sometimes a large monitor. That way, he can see his presentation notes and the next slide on his Surface Pro and display the current slide on the projector. He likes PowerPoint's presentation mode and its ability to track time and even record narrations for later distribution.

Unfortunately, when Michael wants to do ad-hoc whiteboarding, he has to switch his computer to "duplicate" mode instead of "extend" mode. In duplicate mode, the screen from his Surface Pro is displayed (or "duplicated") on the projector. However, in that mode, Michael cannot see his notes as the display is now the same as on the projector. Michael needs a whiteboarding tool that can be used in dual-screen mode, but allows him to use the pen and draw on the primary screen. Below is an illustration of expected behavior.

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<sup>1</sup> Names and data have been modified and are not intended to endorse any particular management practices or project strategies.



Primary Screen (Surface Pro)



Secondary Screen (Projector)

He'd like to call his new "app" *DualScribble*. Maybe he can earn a little bit of travel money by selling it on the Microsoft App Store, but at the very least he can make it available to other academics at his University through the CTE.

One of the technical issues he believes need to be taken into account when building *DualScribble* is that sometimes the app might run in "duplicate" mode while at other times in "extended" mode. Another issue is that the two screens might have different resolution. His Surface Pro has a resolution of 1920x1080 while projector often still only support 1024x768. He also wants the app to run on Macs and Windows 7 computers.

After sketching his ideas concerning the app, he started to work with Bridget Leganis at the CTE. Bridget has helped many faculty members throughout her 11 year career at Warburg University develop their teaching tools. She has been instrumental in bringing Blackboard's Learning Management System (LMS) into the University and integrating it with several internally built applications. Bridget believes that *DualScribble* will be a well-received app by many instructors, particularly those in the Sciences and Engineering.

Bridget is planning her analysis work and has laid out her elicitation strategy in a Requirements Management Plan adapted from a previous project. She will likely need to engage an outside freelance developer to implement the app in C# or perhaps Java. Since most of her freelancers live outside the local area, she knows that the requirements need to be well defined and documented. A highly iterative and agile lifecycle will not work well in this case. She is planning on getting the requirements from Michael and some other faculty and then document the requirements in a wiki rather than a traditional document. That should allow her to make changes as needed to collaborate with the freelance developer.

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