



EX-0128

# Platforms and the Future of Cooperative Extension

*The key to Extension's survival can be expressed in one word: platforms. Social media adoption is critical to our future, but it is only the first step toward the overriding goal of learning how to build the most generative, open-source platforms of the twenty-first century.*

## How Platforms Happen

Monday, October 7, 1957, marked the first day of the ride of a lifetime for two young scientists at the Applied Physics Laboratory at Johns Hopkins University. The day started out on an unusually sour and disturbing note. The previous weekend, the Soviets had hoisted the first satellite, Sputnik, into space.

As science writer and bestselling author Steven Johnson recalls in his book, *Where Good Ideas Come From: the Natural Science of Innovation*, scientists at APL spent the day searching for answers. They wanted to know how this launch would affect the arms race and the future of U.S. scientific leadership.

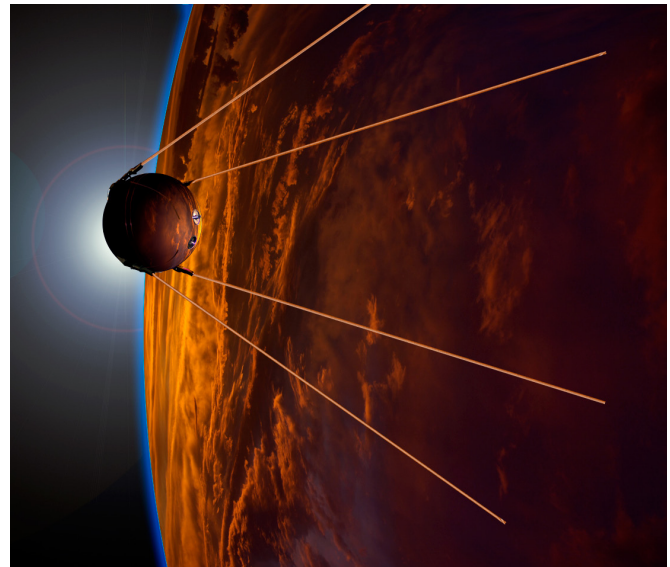
Sometime during the day, the two young APL scientists, William Guier and George Weiffenbach, discovered that they could use equipment available in the lab's inventory to track the satellite's 20 megahertz signal. In time, they came across another interesting discovery: They could use the Doppler effect to calculate the speed and location of Sputnik as it passed through space.

The two researchers had begun what they later fondly recalled as "the adventure of their lives."

Several weeks later, one of their administrators presented them with another challenge. He wanted to know if they could reverse process what they had learned. In other words, he wanted to know if it was possible to determine a position on the ground based on the precise location of an orbiting satellite.

Guier and Weiffenbach soon determined that it was possible. As a matter of fact, this discovery provided the Americans with a spectacular new technology: Naval submarines were soon equipped to use orbiting satellites to deliver nuclear missiles to Soviet targets with devastating accuracy, in case of a nuclear war.

This insight formed the basis of what we know today as GPS (Global Positioning Systems).



The Sputnik crisis produced one of history's most generative platforms.

More than a generation later, following the shooting down of Korean Airlines 007 by the Soviets in 1983, President Reagan, hoping to avoid similar tragedies in the future, signed an executive order freeing for civilian use the satellite-based navigation previously used to point nuclear missiles at the Soviets.

This led to the adoption of global-positioning satellite technology in our everyday lives—everything from printing Google maps and navigating our cars along busy streets and freeways to posting restaurant reviews on Yelp.

The remarkable scientific discoveries that grew out of the initially simple interactions between Guier and Weiffenbach comprise what is known today as an emergent platform. Looking back some 50 years later, the two scientists credit the intellectually freewheeling atmosphere at the Applied Physics Laboratory for producing the conditions in which these ideas could connect and spawn new ideas and innovations.



GPS is one of the many technologies that grew out of the Sputnik crisis.

The platform that grew in response to the Sputnik crisis is an especially noteworthy example of how a handful of insights discussed and explored within fluid networks such as APL provide the basis for sweeping innovations down the road.

## Platforms and Their Significance to Extension

Is there a lesson here for Extension educators? Yes.

In the midst of all this seemingly endless budget cutting and downsizing, a lot of us are wondering why we must invest so much of our time—our increasingly precious time—learning how to use the tools of social media.

Social media adoption is vital to our future but only to the degree that it draws us closer to what we ultimately must become: effective platform architects and builders. For the sake of our own survival, we must understand how open environments like the Applied Physics Laboratory contribute to the kinds of innovation that enhance all of our lives.

Our very survival will depend on how effective we become in building the most open and generative platforms of the twenty-first century—in other words, platforms that produce optimal levels of innovation.

## What Is a Platform?

All this discussion about platforms leads to the inevitable question: What is a platform?

Perhaps a good place to start is a beaver dam. As any forestry or wildlife major would affirm, a beaver dam is not just a means of pooling water; it also provides the basis for an entire ecosystem—an ecosystem that hosts a variety of species besides beavers.

Pileated woodpeckers use dead trees to drill nesting cavities. Wood ducks and Canada geese settle into abandoned beaver lodges. Likewise, beavers aren't the only ones that benefit from the water pooling; so do herons, kingfishers, and swallows—not to mention lizards, frogs and slow-water species.

As Johnson stresses in his book, coral reefs function in a remarkably similar way. Reef-building coral, much like beavers, creates highly complex habitats that enable millions of distinct species to flourish across millennia.

Here's the interesting part: Beaver dams and coral reefs are ecosystems, but they are platforms too—emergent platforms. In both cases, relatively desolate places are ultimately transformed into hubs of activity.



Platforms provide a dense ecosystem for ideas, much as beaver dams and coral reefs provide optimal environments for scores of species.

By now you may be seeing the link between beaver dams and coral reefs and what happened at the Applied Physics Lab in the 1950s.

Just as beaver dams and coral reefs attract and provide highly desirable conditions for a host of new species, the open atmosphere at the Applied Physics Lab provided optimal conditions for the exchange of ideas and the accelerating rates of innovation that typically follow.

As Johnson described it, “APL was a platform that encouraged and amplified hunches [and] that allowed those hunches to be connected with other minds that had relevant expertise.”

## Lessons from Software Design and Web Development

We’ve learned a lot about how platforms happen based on what has occurred in software design and web development. As these fields have demonstrated, the most generative platforms often come in stacks. One prime example: Tim Berners-Lee’s ingenious invention, which we know today as the World Wide Web.

What is the web if not a platform stack, one constructed from earlier Internet platforms? Berners-Lee didn’t engineer an entirely new system for communicating from computer to computer. Many of the parts already existed. His genius was finding a way to stitch all of these parts together using hypertext markup language. In other words, he stacked his platform on earlier ones.



Tim Berners-Lee’s invention, which we know as the World Wide Web, turned out to be one of human history’s most generative platforms.



Boll weevil eradication is one of many highly generative platforms that Extension educators have created throughout our 100-year history.

The World Wide Web is only one of many examples of a platform stack. Another is YouTube, stitched from Adobe’s Flash platform, the programming language of JavaScript, and other web elements.

## Failure to Meet Code

In some respects, what we’re learning about platforms bodes well for us in Cooperative Extension.

Extension educators were building platforms—highly generative platforms—long before this term became popular. In our early days, we not only functioned as a hotbed of innovation, but we also provided the basis for highly generative platforms stacks.

One especially notable example is the Extension-sponsored boll weevil eradication efforts, which contributed to an array of platform stacks, including crop entomology, crop dusting, and crop scouting, to name only a few.

Other platforms built off Cooperative Extension or that borrowed significantly from it include the U.S. Farm Bureau system, public health education, applied home economics, 4-H, the Natural Resources Conservation Service, and community resource development.

Platform building is deeply etched into our organizational DNA. Need we be surprised? Who were Seaman Knapp, Booker T. Washington, and George Washington Carver if not platform architects of their era?

We are still building platforms. The problem is that many of these are no longer up to task. They’re no longer open enough and generative enough to compete in the twenty-first century. They’re no longer

producing innovation at a fast enough rate. They are failing to meet code—the building code of the twenty-first century knowledge environment.

## The Take-Home Lesson

What is the lesson to be gained from all of this? That adopting social media is important but only to the degree that it enables us to achieve our ultimate goal of learning how to build the most open, generative platforms of the twenty-first century.

Building these new platforms will call on us to change how we do business. In the course of building new platforms, we'll learn how to combine our traditional outreach methods with social media techniques. We'll also learn to pull rather than push. Old plan-and-push Extension methods will be replaced with a new one that emphasizes active collaboration with our clients. Our clients will become producers as well as consumers—prosumers. They will work with us as we build the open, generative platforms of the future.

## Platforms as Human Infrastructure

A strong emphasis in public policy circles today is on building technological infrastructure as the most effective way to promote creativity and innovation. Small wonder why: Technological infrastructure has contributed immensely to American scientific and economic leadership.

Yet, so has human infrastructure—the kinds of infrastructure that we Extension educators provided routinely and unfailingly throughout the twentieth century. If you think about it, that's what platforms essentially are—human infrastructure.

We still have the immense potential for providing human infrastructure in the twenty-first century.

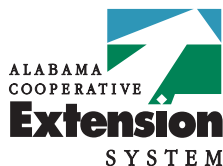


The Extension educator's great challenge of the future will be helping clients deal with the tidal waves of words, symbols, and data pouring out of their laptops, iPads, and Blackberries hour by hour, day by day.

We still have a valuable role to serve in enhancing the connections generated at breakneck speed by the emerging Web 2.0 technological infrastructure.

Our clients will increasingly need help in dealing with the tidal waves of words, symbols, and data pouring out of their laptops, iPads, and Blackberries minute by minute, hour by hour. One of the most prized skills of the future will be the ability to collect vast amounts of information and assemble it into forms that our clients can understand—the reason why Extension educators, in addition to their emerging roles as platform architects and builders, will learn to become aggregators and curators. Who else but Extension educators are better equipped for this role, given our longstanding commitment to research-based knowledge?

But reaching this potential will require a complete rethinking of how we reach our diverse audiences. It will require nothing less than our learning how to become effective platform architects and builders of the twenty-first century.



EX-0128

**Jim Langcuster**, *Extension Communications Specialist*, Auburn University.

Trade names are used only to give specific information for educational purposes. The Alabama Cooperative Extension System does not endorse or guarantee any product and does not recommend one product instead of another that might be similar.

**For more information**, call your county Extension office. Look in your telephone directory under your county's name to find the number.

Published by the Alabama Cooperative Extension System (Alabama A&M University and Auburn University), an equal opportunity educator and employer.

Web Only, **New Aug 2011**, EX-0128

© 2011 by the Alabama Cooperative Extension System. All rights reserved.

[www.aces.edu](http://www.aces.edu)



<http://creativecommons.org/licenses/by-sa/3.0/>