

Is DevOps the Future of Sysadmin?

Bemoaning the Failures of the Sysadmin Profession

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Last year, Doug Hughes and Tom Limoncelli had the foresight to choose “DevOps” as the theme of the LISA ’11 conference. For some at the time, this was a controversial choice. Indeed, for a long time it had not been clear what DevOps even was about. Like “cloud,” DevOps had been suspiciously vaporous, vaguely connected to Web operations, and there was brewing skepticism that there was anything new, more a crowd of novices re-learning old lessons; however, Ben Rockwood’s excellent keynote at LISA ’11 changed that, in many minds.

For the first time, in my view, Ben convincingly linked DevOps to a topic that has been close to my own heart for several years: the extent to which system administration is business relevant in the modern world (actually a topic introduced by my friend Claudio Bartolini of HP research as early as 2006). For the first time, I realized that this grassroots movement in the IT world was saying the two important things:

- ◆ System administration practice, as a culture or profession, is holding us back from doing business fast enough.
- ◆ There is a way for the profession to metamorphose from larva into butterfly by getting sysadmins out of their dungeons and integrating them into the business value chain.

From Skill to Discipline

Since I started writing about sysadmin some 20 years ago now, I tried to crystallize the essence of sysadmin as a discipline, and even usher it with science in the direction of engineering. My views often polarized people—they tended to love or hate the message, because at the scale of the 1990s one could often get away with clinging to the old ways—manual command-prompt legerdemain for any ailment. Today, however, necessary scale and complexity are business imperatives that are forcing the new ways into even the most conservative industries.

When I look at system administration over my career, I see a profession that has simply failed to move forward in those 20 years. The identity and values of the system administrator are basically the same as they were when I started in the field: a pretty closed world of “Do It Yourself,” and then do it over again, fighting dragons by command line. Those who managed to embrace the modern architectural methods of science and engineering built the new super-sized IT-based companies of today. I elevate them to the status of infrastructure engineers, masters of the available tools of predictable automation and modeling. They moved from reinventing every wheel, to a mature commoditization of infrastructure. Some of them are even selling this infrastructure as a service today for the benefit of others.

Recently I have manned myself up to level these fairly harsh accusations in public, and braced for an onslaught of unmitigated flames and hostility. But surprisingly it didn’t come. Remarkably, most sysadmins I say this to ruefully acknowledge that this is the case. True enough, some technologies have changed, certain tools have come and gone, but the basic methodology of do-it-yourself technology quilt-work still pervades a majority of sysadmin practice. Sysadmins need a new identity that doesn’t involve remaking wheels for every

occasion. Imagine if each time a company needed to expand, everyone picked up tools and began building furniture for the new employees instead of going to IKEA? Well, we still do this with computers.

A Profession

Organizations such as SAGE and LOPSA seemed to lose their way, too; by trying to “unionize” the profession, they effectively sent the message that sysadmins just felt poorly treated and underrepresented when they could have led the march to modernize practices and be the heroes of IT emancipation. In fact, the profession as a whole simply failed to adapt to the needs of the rapidly expanding IT industry. Perhaps, if sysadmins had taken on the mantle of responsibility for integrating into business processes, that might have led to their rising up the pay-scale automatically. But system administration has remained, for many, an introverted gaming occupation. Now it needs to become a more disciplined engineering profession. And history is in danger of repeating itself with a new generation of junior admins and impatient developers working with the cloud, or with new scripting frameworks for automation.

Developers and Sysadmins Work Together

The term DevOps was coined by Patrick Debois while working as a consultant helping to deploy applications. He observed that Developers and Operations people were often mistrustful of one another, and that this often led to delays and problems. The answer was to promote a culture of inter-departmental cooperation. After all, the languages of programmers and sysadmins are not that far apart.

When DevOps came along and saw the clash of old and new, they publicly shook both parties by the lapels, saying: act like specialists who respect each other. Developers represent business value, and need to make rapid changes to cope with modern online commerce. Sysadmins (operations) experts know more about security and configuration and how to do the job properly. So folks, work together (damn-it)! By working closely, sysadmins become the heroes who deploy quickly and developers learn how

to write for real-world systems instead of merely dumping their code onto sysadmins with a “Deploy this!”

The pace of change is picking up in the industry today. System administration in the old sense (caught in a poverty trap of firefighting and lurching from crisis to crisis, because of lack of holistic thinking) will become extinct because business can't afford it. It will be replaced by a smaller core of infrastructure engineers who can think in larger terms than following “how-tos,” or they will go to the IKEA of infrastructure—the rapidly improving cloud providers.

The future is not really about replacing humans with machines; it is about respecting the role of humans, their cooperation and their creativity. People should not be logging onto computers by hand to debug and diagnose alarms, any more than farmers should be reaping the harvest with a scythe. DevOps says, if you lay out your corn properly, I can get it to market ten times as fast. That is what makes the industry go around, and the industry will pay a premium for it.

Summary

System administration cannot survive in its present form forever. As technologies go mainstream, jobs change. Look at the Internet business, which has gone from being a specialized engineering task to a commoditized split between a few “architects” and a lot of “cable guys” who install the box. Automation will change the face of IT over the next ten years in a similar way.

So what can we learn from DevOps? Well, it did not set out to become a panacea model for operations, or even be an alternative to system administration—but it is evolving faster than system administration into a respectable, modern engineering culture for business optimization. The term system administration is already falling from favor as a concept. Site reliability engineer is, after all, a more compelling title.

There is something to learn from DevOps. There is time to mold it, to make a difference. So, never mind the name. Change it, if you like, but listen to what it is saying. We need it.