Virtualization: Evolution not Revolution

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Many in the industry are speaking about virtual machine software and virtualized environments as if it is a revolution. Since much of the technology has been seen in mainframes and midrange systems for almost three decades, this is not likely to be true. The infrastructure of most organizations is a chronological layer cake of technologies making revolutionary changes problematic. Virtualization, when added to the mix, can be either a wonderful thing or something that will magnify current issues. Most organizations follow the "Golden Rules of IT" when adopting new technology.

THE GOLDEN RULES OF IT

Most IT executives understand that maintenance is a very large part of their budget. Since they're facing the task of keeping everything running, they tend to be "very prudent" making major changes. Over time, a set of unspoken rules has come to guide decisions about new technology and the adoption process. Here's a quick summary of those rules:

1) **If it's not broken, don't fix it**. Most organizations simply don't have the time, the resources or the funds to re-implement things that are currently working.

2) **Don't touch it, you'll break it.** Most organizations of any size are using a complex mix of systems that were developed over several decades. Changing working systems that are based upon older technologies, older architectures and older methodologies has to be done very carefully if the intended results *and only the intended results* are to be achieved.

3) **If you touched it and it broke, it will take longer to fix and, in all likelihood, cost more than you think to fix.** Most of today's systems are a complex mix of technology. If the organization is going to be updating part of that tower of software, IT executives must be prepared for unexpected consequences. See Rule 2.

4) **Good enough is good enough.** Although it would be nice to have the luxury of unlimited amounts of time, resources and funding and be able to develop every conceivable feature, most IT executives know that they are only going to be allowed the time, the resources and the funding to satisfy roughly 50% to 60% of requests for new capabilities. The rest of their resources are focused on maintaining the status quo.

5) **Don't make major changes unless people are screaming!** If the user population isn't screaming, IT executives focus their attention on Rule #4, good enough is good enough. If the user population is merely asking for changes, IT executives focus on Rule 2, don't touch it, you'll break it, and Rule 3, if you touched it and broke it, it will take longer to fix than you think. If they begin screaming, IT executives know that they'll have to do something to respond. They do their best to "touch things very lightly."

6) **Embrace your "jerkdom."** Everyone knows that the organization's IT infrastructure has to move forward and embrace new technology. The organization must be as efficient and successful as possible. In short IT executives know that they must do the best they can with the resources, the time and the funding available and accept the fact that many years from now someone will look at what was done and come to the conclusion that what was done was insufficient in some way or didn't properly forecast future events are requirements. The onlookers, of course, are going to make their judgments based upon what they know then rather than based upon what was known when the decisions were made.

Some IT suppliers, however, seem unaware of these rules and often believe that organizations will abandon years of investment in order to rush to their newest offerings. In their enthusiasm for their products and their strong desire to make a quick sale, they forget that IT executives are more interested in prudently managing and fully exploiting the technology they already have in their datacenters than abandoning their current investments.

IT EXECUTIVES DON'T THROW ANYTHING AWAY

If we took a tour through the datacenters of most organization, it would quickly become clear that they're chronological layer cakes or museums of technology. Each layer uses the results of the supporting layer and does something that was never thought, wasn't possible with the available technology or wasn't a priority at that time. Let's look at each layer in turn.

At the bottom of the stack, there are systems that were architected nearly 30 years ago and have been supporting the organization's IT strategy ever since. It is quite likely that this layer is made up of mainframes running well-established transaction processing and database software.

On top of that layer, there are systems that were architected 20 years ago. This layer is commonly made up of midrange systems running a single vendor's proprietary operating system or UNIX. These systems access the data and applications in first layer and offer added value based upon that layer.

Ten years ago, new systems were installed that accessed the data and functions offered by layer 2 that offered new added value. These systems were typically industry standard systems running Windows, UNIX or Linux.

At some point, personal computing technology as added to the mix to provide a more graphical user interface and to do some local computing functions. Over time, these systems have taken on more and more functions and have become an additional layer of computing.

Web-based applications were added sometime after the personal computer layer was installed. Often this layer was added to make it possible for customers, partners and consultants to access a segment of the organization's systems.

HOW DOES THE IT INFRASTRUCTURE CHANGE? SLOWLY!

It's easy to see that changing something at the bottom layer of this chronological layer cake is likely to cause havoc in higher layers. Removing or changing a middle layer will also create problems for those whose job it is to keep things going. Most organizations change their IT infrastructure very slowly to prevent important systems from "going dark" unexpectedly. New technology is typically applied to new applications rather than being used to uproot and replace older applications. Older applications are revised to use new techology only when it appears prudent and safe.

Furthermore, IT executives won't move unless it is clear that new technology will fit comfortably in the environment *and* can be managed using their selected tools

and frameworks. The recent advances in virtualization technology for industry standard systems are no different.

SUMMARY

It's very important for IT executives to see today's technology from the broadest possible viewpoint and take the Golden Rules of IT into account before rushing forward. New technology should be brought into the infrastructure in a non-disruptive way.

Key questions, such as:

"Where is the organization going to be 5 years from now?",

"What will the organization's priorities be 5 years from now?",and

"What types of staff expertise are available today?"

should be completey addressed. Making sure that new technology can be effectively managed by currently-installed tools using the expertise that is available today is another important consideration.

It's very important to keep something Lawrence Peter once said "If you don't know where you're going, you will probably end up somewhere else."