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The Software-Defined Data Center

Will yours come about by accident or design?

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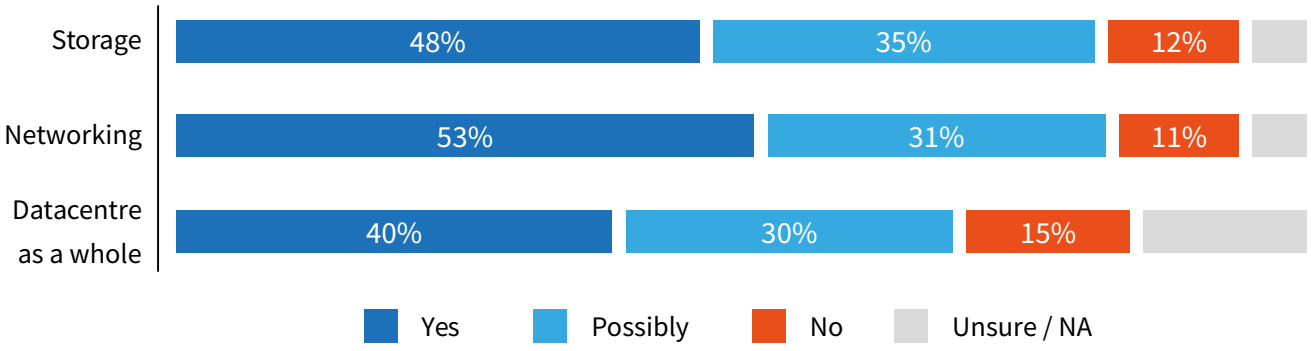
One of the great things about the IT industry is the constant stream of new ideas. One of the not so great things, however, is the equally-constant stream of buzzwords and phrases that, instead of making communication easier, often cause confusion and misunderstanding. This happens in particular when IT vendors or special interest groups define the same term differently in order to further their own agendas.

With this in mind, it would be easy to dismiss 'Software-Defined Data Center' (SDDC) as simply the latest hot marketing term designed to help sell you something. After all, over the past three years, many IT vendors have been guilty of attaching the 'software-defined' label to all sorts of familiar (sometimes quite old) products in an attempt to reposition them as modern and exciting.

The fundamental concept of software-defined infrastructure is clear, however: you expose a standard set of APIs that allow as many aspects of the physical infrastructure as possible to be automated and managed through software. And despite the noise, a recent research finding showed how important this concept is to forward-thinking IT professionals. This is particularly true in relation to storage and networking, but the higher-level concept of an entire SDDC is not that far behind. In essence, you will get software-defined infrastructure whether you want it or not, so you had better plan for it rather than letting it just happen.

Whether or not you are seeing a shift to 'software-defined' right now, do you regard it as important to the future of the following?



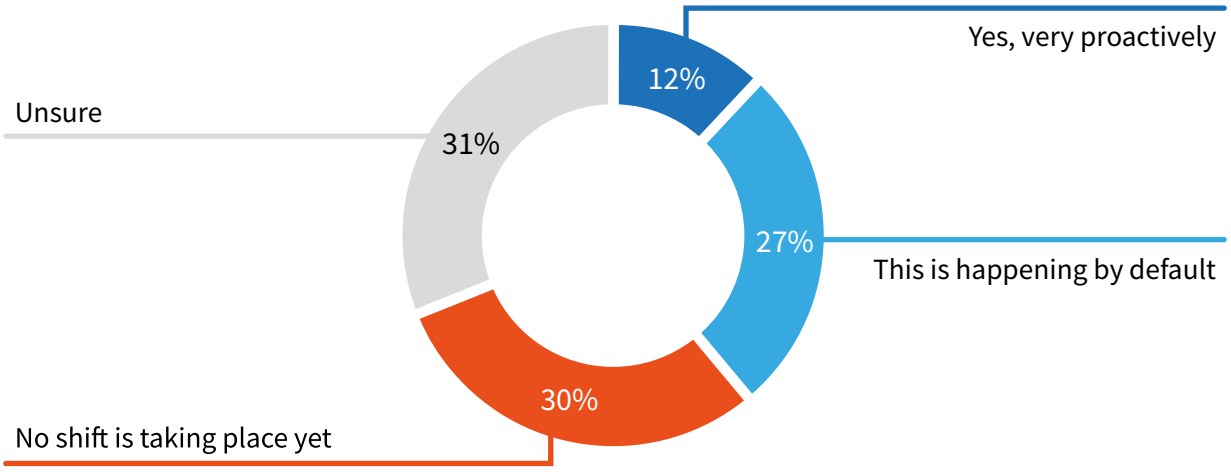
Source: Freeform Dynamics, 2016 (Online survey, 2038 respondents)

The net positive view we see here is understandable when you consider that IT teams have traditionally had to cope with a myriad of hardware devices with a wide variety of embedded control functions. Making even the most basic policy change has often involved reconfiguring a range of equipment using a disjointed set of proprietary administration tools that will only talk to the vendor's own hardware, or even only to a single product. And while specific activities can be automated or scripted, the complexity is still there once you try to do anything that isn't yet scripted.

Abstracting control into a software layer, and using standard APIs to allow easier integration between systems and tools, makes the whole environment much more open, flexible and manageable. Indeed, many argue that software-defined infrastructure is one of the most important enablers of IT simplification – and simplification is a key objective for many IT departments.

However, another finding from that same study suggests that few are taking the opportunity to drive greater efficiency and responsiveness in this way. When asked about the concept of software-defined, about 30% indicated no activity, with a similar number ticking the 'unsure' option in the survey. That's 60% overall telling us they are doing nothing, or at least nothing particularly obvious.

> 'Software-defined' is a bit of a catch-all buzz term, but generally speaking are you making infrastructure investment decisions that will shift control and management functions from the hardware layer further up the stack into the software layer?



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One reason for this lack of tangible activity is that many IT professionals still see software-defined as primarily a marketing buzzword. Acknowledging the validity of an idea is quite different from believing that IT vendors are delivering on it! And who can blame experienced professionals for being skeptical after catching less-scrupulous suppliers using the term 'software-defined' in a contrived manner while offering little, if anything, that is fundamentally new.

That said, a small but significant minority (12%) told us that they are acting on the software-defined opportunity 'very proactively'. These respondents clearly appreciate the potential and are moving forward positively. We'll come back to this shortly, but for now let us turn our attention to the sizeable group (27%) telling us that software-defined solutions are coming into their organization by default. This kind of activity is significant and has important implications.

The upshot is that unless you freeze your infrastructure or decide that you are only going to buy previous generations of technology from this point onwards (which doesn't make sense in most environments), you simply can't avoid software-defined solutions in the coming years, even if you want to.

But if it's going to happen anyway, why worry? Well, if you just sit back and let things take their natural course, the danger is that you will perpetuate the fragmentations and disjoints that are the root cause of so many risks, inefficiencies and headaches for IT teams. The reality is that it is still early days, and the vendors that really are delivering software-defined solutions are often tackling things differently. For example, they might allow components to talk to each other through APIs, but not necessarily in the same way. If you aren't careful, you will therefore end up with lots of software-defined silos, and/or a complex and costly integration burden.

Coming back to the broader concept of the software-defined data center, if you see this as your ultimate vision, as many of our survey respondents do, then you really should be taking steps to move towards it in a coherent and organized way.

In terms of tactics, when considering options for new infrastructure, always look for software-defined control and management where relevant, and when considering vendors, make sure they are implementing the software element of the solution in an open manner. There are not many formal industry standards in this space at present, so in practical terms this often means looking for strategic partnerships and integrations. A good point of reference here is the stack (or stacks) you favor for the virtualization or cloud layer in your IT environment. Whether you are committed to VMware, Microsoft, OpenStack or some other approach, make sure that the necessary integrations are in place so resources can be provisioned, configured and administered from whatever tools you use for higher-level orchestration and systems management.

The key to success here is ensuring that partnerships between relevant vendors are genuinely strategic. If not, then choosing a single SDDC vendor with a pre-validated and pre-integrated infrastructure design can be a simpler option. After all, there is a big difference between a marketing alliance and a partnership where there is tangible investment in maintaining alignment and robust integration as the partners' product roadmaps continue to evolve. Aiming for a single pane of glass to control the entire data center is probably unrealistic at this stage, but making informed and considered decisions on technology options will ensure the right controls and data will surface where needed.

If you let your software-defined journey happen by accident, however, you might end up with lots of software-defined storage and networking, but the broader SDDC opportunity will be much harder to exploit. Proactivity is important, and with current industry momentum it is important now.

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