Building a Reliable and Resilient IT Environment through Culture Change

Author: David Howie, Enterprise Architecture Technology
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The way of architecting business applications has gone through multiple transformations in the last 30 years, from a centralized computing platform with dumb terminals, to a distributed model with desktop applications. The transformation continued with HTML generated by a collaboration of server side applications and a Service Oriented Architecture (SOA). The current paradigm consists of dynamic HTML in combination with a server side compute model, a vast SOA deployment, and the latest in REST/JSON implementation patterns.

The IT infrastructure has continued to transform as well, with the proliferation of firewalls, load balancers, web servers, web application servers, messaging products, Enterprise Service Buses, specialized appliances, multiple Database Management Systems, and so on.

Business models have transformed as well. Customers and business partners expect 24 x7 availability. Business users may span across multiple time zones or the other side of the planet. Perhaps there is a market for the internal business applications and your organization is now a provider of Software as a Service (SAAS). And aside from all of that, the expectations of the internal business users have changed; unplanned downtime cannot be tolerated.

So what do you do when you find challenges with avoiding unplanned downtime? A common reaction may be thinking that more or better technology is needed. Although there may be opportunities to improve the technology footprint, this thinking may fall short. The IT culture may very well be where the primary focus should lie.

Have your employees adapted to the changing demands of the IT world? When an outage occurs, are they going beyond simply restoring service, driving to true root cause, and deploying solutions to prevent repeat occurrences? Do they recognize that the solution to prevent a repeat is not always a technical solution, but may be a gap in procedures, or a gap in the expectation for team members to follow procedures? Do they strive to understand the collaboration between all the moving parts in the environment, and how a change in one area may affect other areas? Are they figuring out ways to load and stress test the IT services they provide to the organization, or are they assuming such testing will be covered by someone else's efforts? Do they trust that the redundancy works as advertised, or are they finding innovative ways to simulate unexpected events in order to validate that everything behaves as expected when a failover occurs? If they're not doing these things, then they may not be aware of expectations.

How do you change the culture? The first step is communication, and lots of it. You need to communicate the objectives and the business imperatives- "*why* things *must* change." You need to communicate expectations relative to the objectives, particularly the behavioral expectations necessary to achieve the

desired outcomes. There needs to be support from the top down. All must be on-board; continually pushing the future state vision downwards through their organizations. The message needs to be repeated often. One way to engage individuals is to create a short catchy name that everyone readily associates with the effort, yet a name that succinctly drives home the objectives.

Beyond communication, metrics are needed that are well-aligned with the objectives and easy to understand. The metrics need to be put in front of everyone on a regular basis as a continual reminder. If there is a wide divide between current state and desired end state, then the metric goals may need to be adjusted over time, making each adjustment somewhat of a stretch to achieve while remaining reasonably attainable. Don't underestimate the effort needed to routinely gather, format, and publish the metrics. You need to deploy the people, processes, and automation necessary to make the metric reporting sustainable.

When embarking on an effort to improve the reliability and resiliency of IT environment and business applications, having the right people, processes, and technology are all key elements to long term sustained success.