



WHITE PAPER
**Re-inventing the TEM
Organization to Adapt to
Accelerating Technology
Advances – The Future of TEM**

TEM and Digital Transformation Collection
Part Four

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With dramatic change occurring in the Telecom Expense Management (TEM) environment, it's a good time to re-imagine and re-invent the TEM organization to conquer new challenges more efficiently.

How do you define “success?”

Most would agree that we consider a project to be successful when it is completed by or before deadline, achieves or exceeds its stated objectives, and is delivered within budget.

That third characteristic, the context of cost, is driving dramatic change in the requirements and participation of the telecom expense management (TEM) team in an organization. In fact, the change is so profound that many are urging the industry to allow the acronym TEM to evolve into technology expense management.

The explosive growth of cloud and now multi-cloud solutions has created a new imperative for TEM to actively participate in the overall management of technology deployment within an organization. Previously, the information technologies (IT), management information systems (MIS), and network management departments deployed and controlled the implementation and operation of technology solutions within an enterprise. TEM was relegated to just paying the bills and making sure they were charged and paid correctly.

Several advances have contributed to a significant increase in the importance of TEM.

The Internet of Things has changed the complexion of technology deployment in most organizations. Beyond all the people who communicate with each other, many things are now communicating as well. Many, many things. Sensors, switches, and other controls are being deployed in the tens or even hundreds of thousands. Each of these devices communicates with the rest of their network, and each of those connections must be paid for. This also means that each device represents another opportunity for billing errors that could spell the difference between success and failure due to operations exceeding budget. Simple mis-billings, connections for retired devices still being billed after de-commissioning, beaconing devices can all create erroneous billing. TEM must be vigilant in monitoring a greater volume of devices. Greater by orders of magnitude!

Driving the Increasing Importance of TEM

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Cloud computing has added far more to the inventory of monthly recurring charges. Formerly, the telecom estate included monthly charges for every line in service. Now those connections are simply conduits to an even larger array of new cloud-delivered subscription services that each bill regularly, usually monthly or quarterly.

One of the attractive features of cloud computing is the concept of consumption-based billing, or “pay-as-you-go.” In these, the organization subscribes for, and pays for a committed quantity of service consumption. Any utilization beyond the subscribed amount incurs overage charges. In the earliest days of infrastructure-as-a-service (IaaS) customers were often unhappily surprised by huge overage invoices. Surprised because they had no real way of monitoring utilization. TEM provides a critical service in keeping track of consumption and proactively notifying operating departments when their utilization is nearing the subscribed threshold.



Financial and procurement professionals must work hand-in-hand with technology experts who understand and can properly configure the “virtual machines” and “reserved instances” that are key components of these pricing and purchasing changes.

Multi-cloud, in which several different cloud service providers are combined to deliver a broader scope of services, adds new complexity. Not only are billing methodologies and rates different between cloud providers, but services also have different names which can easily introduce confusion.

Exacerbating the problem, all the cloud service providers pricing programs are constantly changing requiring TEM professionals to continuously track them and make system adjustments as necessary. Financial and procurement professionals must work hand-in-hand with technology experts who understand and can properly configure the “virtual machines” and “reserved instances” that are key components of these pricing and purchasing changes.

Multi-cloud environments bring with them the potential of completely redefining how we arrive at “the best solution.” In fact, with competition driving constant improvement, constant change, constant re-pricing, and the constant introduction of new functionality and new capacities, the definition of best solution may change frequently requiring TEM to keep in constant partnership with IT, MIS, and related departments. This is perhaps the most compelling expression of the Agile concept of constant improvement through constant development (CI/CD) as it adds a financial dimension to Agile decision-making.

Microservices and Containers have completely re-defined the way software applications are architected. By taking formerly monolithic applications and breaking them down into their component parts as microservices and transporting these inside containers that include all the resources each needs to do its processing, today's software takes far greater advantage of the characteristics of cloud computing. This makes the software far more efficient, far more responsive, and far more resilient than ever. When a monolithic application had an error, it could potentially bring the entire system down. When a microservice fails it is discarded and re-instantiated instantly, delivering a new level of resilience.

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One of the results of this new architecture is a substantial increased in cloud communications consumption. Unchecked, inefficient coding could result in unanticipated overages in transmissions and therefore increased billing. Again, TEM has something new to carefully monitor to report anomalies that may require immediate action.

Unified Communications-as-a-Service (UCaaS) is rapidly reducing the need to use the public switched telephone network (PSTN) as more and more integrated voice, video, and data traffic are conducted over the IP-based internet.





Work-From-Home (WFH) initiatives were forced upon every business by the COVID-19 pandemic. According to Gartner, three-quarters of companies surveyed acknowledge that anywhere from 5% to 100% of their workforce will never return to office or other dedicated places of work. Companies including Twitter have already announced that everyone in their company will work from home from now on.

Suddenly, TEM is confronted with the need to monitor employee connections over residential internet service providers from home networks that may or may not be equipped with adequate security provisions such as virtual private networks (VPN) or similar encryption solutions. As more collaboration and communications are conducted from a wider variety of heretofore unknown endpoints, monitoring and managing these newly re-imagined corporate/consumer hybrid networks can easily become nightmarish.

American theologian Leonard Sweet asks us, “What is the difference between a living thing and a dead thing? In the medical world, a clinical definition of death is a body that does not change. Change is life. Stagnation is death. If you don’t change, you die. It’s that simple. It’s that scary.”

TEM is clearly alive and well, and growing at a rate that is, itself, accelerating. Organizations are best served to bring their leadership together to further explore the growing relationship between TEM and the rest of the various operating departments. The most important return on such discussions is the continuing creation and development of initiatives that deliver meaningful results on time and within budget. Beyond budget, as cost-effectively as possible.

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