The Operations Maturity Model: A New Paradigm for Optimizing IT Value

Operations maturity is a key measure of how well an organization’s IT operations are run. Standardizing processes is an essential step toward ideal operations maturity. A new model provides a structured, synergistic view of this field, helping organizations benchmark performance. It serves as a roadmap defining where an organization needs to improve systems management.

Introduction
The story of IT spending is a familiar tale at most organizations. Typically, it’s two tales, with two storytellers. As told by the CFO, the narrative runs something like this: IT spending is too high and tangible returns from existing spending levels are mostly unrealized (or at least unapparent). Budget freezes or slashes are necessary to control IT costs and impose budget discipline. But the CIO is likely to tell the tale this way: the IT department’s resources are being taxed to the limit by demands from across the enterprise, however, further IT investment has been declared out of the question. IT cost cuts threaten the level of service IT provides to internal customers, not to mention the functioning of mission-critical operations.

In a constructive reading of each story, two questions emerge. The question driving the CFO’s narrative is, “How do I get more bang for my buck?” For the CIO, the question is, “How do I get more from my technology?” In truth, the questions are two sides of the same coin. They represent different angles of vision on the same problem. This problem is, essentially, one of value. How is it possible to fully leverage existing IT resources and maximize the return on (judicious) IT investment? In other words, how do we both control our IT costs and increase the performance of our IT operations?

As the tale of two tales suggests, what is needed is a shared operational methodology for attacking a shared, enterprise-level challenge. This paper outlines such a methodology, the operations maturity model, developed and refined on the strength of nearly 15 years of managing diverse customers’ IT operations. The model, rooted in the idea of operations maturity, offers organizations a powerful new paradigm for thinking about, and dramatically improving, the efficiency of IT operations as well as the relationship between technology costs and the value of the services the costs return.

Defining Operations Maturity
Operations maturity embraces all the processes, people, and tools used to manage, support, and optimize the performance of computing operations. In the context of an individual organization, operations maturity is a measure of how well run the organization’s IT operations are, e.g., the extent to which standard processes, monitoring tools, and resource consolidation characterize the organization’s systems management approach. Beyond the individual enterprise, operations maturity can also be used to talk about the systems management sophistication associated with particular hardware types. So, for example, the operations maturity of mainframe computing is much greater than the operations maturity of Unix.

Operations maturity nearly always delays the introduction and adoption of new hardware. Organizations need time to develop and optimize systems management practices around new hardware following adoption. Sometimes there is relatively limited impetus for organizations to rapidly build systems management expertise, in which case operations maturity falls far behind the technology adoption curve for a given type of hardware.

Current levels of operations maturity across different platforms reflect the history of the platform’s introduction as well as the business criticality of its computing role.

Mainframe
In the early days of mainframes, organizations had to learn to manage computers. Operations maturity lagged while early IT departments evolved a discipline of mainframe computing management. This delay was purely a learning curve issue as mainframes were from the beginning understood to be an important business asset. Today, mainframe operations in leading IT organizations are extremely
mature and organizations with relatively low mainframe operations maturity can draw upon a range of advanced mainframe management tools and best practices to dramatically improve operations.

**iSeries**
Operations maturity for the iSeries scaled up quickly following the platform’s introduction. The rapid evolution of iSeries systems management expertise reflected the platform’s status as a business computer and business-critical asset, and was aided by the operations maturity trail mainframe computing had already blazed.

**Unix and Windows**
With open platforms the story is much different. Operations maturity was, and continues to be, extremely slow to take root in Unix and Windows environments. There are several reasons for this. Neither Unix nor Windows ran mission critical applications (Unix was designed as an engineering tool, Windows as a replacement for file print serving) and neither started out in a data center environment. As a result, there was little perceived need to manage the systems in a professional manner. To a large extent, availability, reliability, and other standard quality of service metrics weren’t even viewed as particularly relevant design points. The cost of poor management was not initially felt across the enterprise. Only in the last six to eight years, as Unix moved into the mainstream of business computing has attention turned to systems management. Still, Unix (and to an even greater degree Windows) falls far short of mainframe computing in developing and maturing the processes, people, and tools required for high-leverage operations management.

**Operations Maturity Model**
Most organizations are grappling with operations maturity. Although organizations are more likely to think about one or more discrete systems management practices that fall under it (e.g., standardization of certain operational procedures) than about operations maturity as a unified concept. There is an overwhelmingly need to approach IT operations in a structured, synergistic way rather than a piece-meal fashion. Accordingly, an operations maturity model (OMM) provides organizations with:

- A tool to quantify and benchmark their overall approach to systems management in terms of defined and universally applicable levels of IT operations management efficiency and expertise.
- Similarly, a tool to quantify and benchmark critical individual elements of their systems management approach, to help isolate areas of relative strength and weakness.
- A roadmap for defining where an organization needs to move to improve systems management, and how to get there.

The OMM gives organizations a rating based on a one-to-five scale of low to high operations maturity. This scale takes into account six critical factors. The model also rates an organization’s maturity vis-à-vis each individual factor. The six factors are the things organizations can do that make a difference in operations maturity. These factors are the important structural elements that determine the level of maturity of an organization’s IT operations – regardless of the organization’s size or platform choice – and thus constitute the building blocks of an effective systems management strategy. The factors include areas where operational gains yield dramatic returns in the form of: availability, reliability, burstability, predictability, scalability, upgradability, and the like.

**Standardization of Processes**
Standardizing processes is an essential first step toward operations maturity. Haphazard, one-off systems management approaches do not deliver predictable, reliable results, nor do they permit effective analysis and avoidance of problems. Rather, organizations should have a process that can be executed consistently every time. They should also have a procedure for deviating from the established process (e.g., escalation, sign-offs, peer review) if problems arise. Organizations can begin by documenting existing protocols, then reviewing protocols and incorporating best practices.

**Automation of Processes**
At low levels of operations maturity, there is typically a significant degree of process automation that occurs. Automation delivers the obvious benefit of eliminating human error, something even the most carefully scripted set of systems management procedures cannot guarantee. Automation’s low-hanging fruits include systems monitoring and tape mounting, but even higher-value tasks, such as issue/problem response, can be largely or wholly automated in some cases.

**Skilled Problem Resolution**
Skilled problem resolution is primarily a function of the level of experience and expertise of the systems management professionals handling your operations. Better skilled people ensure faster and more efficient problem resolution and a lower likelihood of problem recurrence. Of course, there are automated ways to augment the effectiveness of IT personnel in detecting and solving problems, e.g., automatic triggers, advance alerts, systems diagnostic tools. While organizations (for whom IT is typically a cost center) may be limited in their ability to invest in IT personnel, IT outsourcing providers can (and ideally do) invest heavily in their human capital and hence deliver greater expertise, skill, and problem resolution effectiveness.

**Quality of Service**
Higher levels of operations maturity are defined in part by an organization’s ability to translate important business metrics into appropriate service levels. The overriding objective is to define the quality of service required for a particular application or function and manage/monitor systems performance against that service level. Because quality of service levels are essentially proxies for business intent, they will be more or less stringent across different applications, in accordance with the business needs and criticality associated with each application.

**Standardization of Hardware and Software**
Standardization of hardware and software can create huge efficiencies in an IT organization by virtue of the common processes/procedures and accrued systems management expertise they enable. While hardware standardization is less important in the mainframe world (because organizations typically have very few mainframe systems with a limited number of LPARs), it is vital with Unix and Windows. Across all platforms, standardizing on software and version levels is a key strategy for improving technology leverage.
IT Asset Consolidation and Sharing
Organizations can significantly advance their operations maturity through consolidating and sharing IT assets – typically by outsourcing to a third-party provider. By sharing hardware assets with other customers of the outsourcer, organizations gain access to technologies and systems management resources that far exceed what they would be able to put in place in-house. Importantly, asset consolidation and sharing also delivers a high degree of processing efficiency, whether through running multiple applications off of the same operating system or – for even greater leverage-multiple tenancy. Consolidation and sharing in Unix and Windows is particularly compelling: the average CPU utilization of Unix has been less than 15 percent. Companies are spending seven to eight times more than they are actually deriving in value from these computing platforms. IT outsourcers, particularly as Unix and Windows operations mature, can deliver significant improvements on these efficiency numbers.

Cost of Technology vs. Value of Service
In addition to situating an organization within an operations maturity framework and pointing the way toward next-level evolution, the OMM provides another important piece of information. The model quantifies the delta between an organization’s cost of technology and the value that technology delivers (e.g., in the form of application performance, systems automation, and operational efficiency). When technology costs exceed service value (i.e., the delta is negative), a lack of operations maturity is typically to blame. In essence, the delta between technology costs and service value is another, highly economical and impactful expression of the relative maturity or immaturity of an organization’s operations. A large negative delta should serve as an urgent call-to-action, suggesting as it does that an organization’s technology investments are not justified by existing service returns. Assuming reasonably sound investments, the reason for poor returns is, overwhelmingly, the result of poor management and leverage of IT assets. There is clear room for improvement in operations maturity.

Let’s say you take specific steps – in some strategic combination of the six areas discussed above – to mature your IT operations and close the gap between technology cost and service value. Is the result a simple “balancing out” of cost and value (i.e., a delta of zero)? If you have truly pushed your organization to a higher level of operations maturity, the answer (perhaps surprisingly on the surface of things) is no. Rather, if you are fully leveraging technology, you can actually drive down your unit cost of IT while simultaneously realizing greater service value. The OMM delta will be positive. CFOs will get more bang for their buck, and CIOs will get more from their technology.

So what does it look like in the real world when an organization moves up the operations maturity scale to access higher levels of computing service at lower cost? Oftentimes, startling. Consider the case of one organization that moved from a level two operations maturity to a level three. Through consolidating its processing assets, standardizing and automating key processes, and replatforming its computing operations, reduced its number of computers from 45 to seven. Every measure of the customer’s systems performance – availability, reliability, scalability and more – showed considerable improvement. The customer’s IT costs were cut in half, from $10 to $5 million. In this case (and in many others), the key to the step function reduction in costs has been the introduction of asset sharing, i.e., the sharing of a common operating system across multiple computing functions.

Driving Down the Cost of Computing: No End in Sight
As dramatic as this story is, some version of it describes the experience of each IT operations group with whom i)Structure has worked. IT operations departments who have fully engaged with the OMM have rewritten their IT value equations, so that the value of their service exceeds the cost of their technology.

The crucial point here is that this trend – the continuous creation of greater levels of value within systems management – is a reflection of operations maturity at work. The OMM, then, is more than a measurement tool; it is the fundamental model that is allowing IT operations groups to leverage technology to its fullest to gain greater service value per unit of cost.

Given the value waiting to be realized, increasing numbers of IT operations groups will be unleashing the high-leverage logic of operations maturity. The name of the game is to design processes and procedures that best support your computing assets – thereby maximizing the value you reap. Today, the opportunities for operations maturity gains are significant, especially across open source platforms where most organizations’ IT operations are relatively immature. Going forward, opportunities for value creation fueled by operations maturity will proliferate as new technologies do.

To the CFO and CIO we say, “The story is still unfolding. Stay tuned for the next installment.”