



IT Disruptors Bring Management Challenges and Opportunities

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Summary User IT organizations are simultaneously being driven to reduce costs and to support increasingly dynamic and agile business processes. As a result, IT organizations are increasingly adopting one or more fundamental changes such as Software-as-a-Service (SaaS), Service Oriented Architecture (SOA), Open Source software, and a virtualized or Utility Computing infrastructure.

Earlier this year Saugatuck identified these “technology disruptors” as presenting both capabilities and problems beyond the scope of what most user enterprise IT management organizations, systems, practices and skill sets can adequately address (see [IT Management Evolution: All Roads Lead to Rome](#), STR-372, 31Jul07, and [IT Management: Disruptive Influences Driving Four Stages of Evolution](#), RA-390, 26Sep07).

These disruptors necessitate rapid evolution in IT management skills and processes. Tomorrow’s amorphous, dynamic, hybridized IT environment will not be managed effectively (or cost-efficiently) by yesterday’s processes. In this *Strategic Perspective*, we provide insights into the current evolution of IT management, including the timing, challenges, and the resulting opportunities for vendors.

The author invites your comments and inquiries on this *Strategic Perspective*

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So What?

User enterprises are rapidly adopting new ways of using IT, and the management of IT resources must similarly advance. While most user IT organizations are more adept and highly-skilled than ever, their management of IT – from technologies to business enablement – is grounded in historical needs and practices. Technology disruptors are quickly highlighting how IT management must change. Understanding these changes will help users understand the challenges they will face, and will help IT vendors understand where – and when – opportunities for IT management technologies, tools, and services will arise.

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Perspective **Stages, Phases, and the Timeline:** Saugatuck sees the evolution of IT management progressing from the conventional or “Traditional Stage” of IT Management through the Virtualization Phase and the SaaS Infusion Phase, to the Hybrid Stage. This evolution is portrayed in Figure 1 for an “average” IT user.

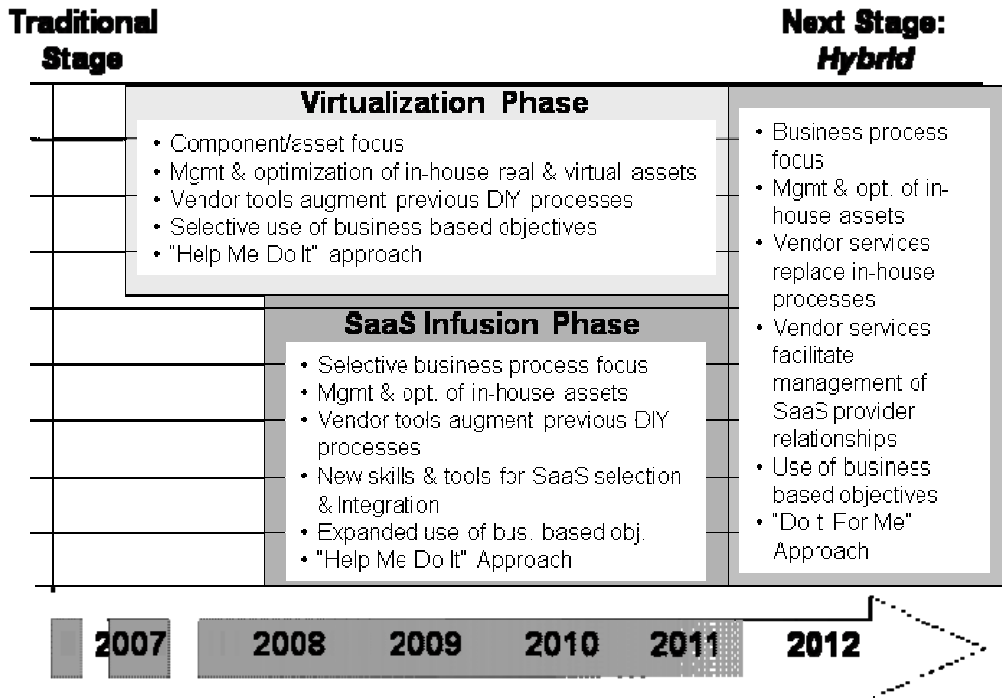
Traditional Stage: This is Saugatuck’s term encompassing the IT management skills, tools, and processes which are currently practiced by most user IT organizations.

The Traditional Stage has its roots in the earliest days of computing when data processing staffs were considered to be the “high priests” of “high tech”. The exorbitantly expensive equipment was housed in special rooms. The people responsible for data processing spoke in strange tongues using terms which such as “bytes” and “I/O”; wrote in strange languages such as Assembler and JCL; and could read the dreaded “core dump”.

It is easy to understand how management of that data processing equipment

was based on equipment-centric metrics such as CPU seconds, access times, etc. Further it is easy to see how the high costs of that equipment motivated management to focus on maximizing utilization. The underlying mantra of executive management was: I paid for 100 percent of the equipment; I should be able to use 100 percent.

Figure 1 – IT Management Evolution: Average Progression



Source: Saugatuck Technology

Thus, Traditional IT Management focuses on *optimization and management of components* or assets such as processors, storage devices, communication links, etc. For years, tools, processes and organizational structures for managing the IT infrastructure were developed in-house. Agents were developed to compile information within individual components that depict utilization, performance, etc., in component-centric metrics. Tools were developed to collect this information and report it. Eventually vendors offered tools which later grew into suites of tools to support those processes and organizational structures.

Interpretation of the information and determination of appropriate action was eventually automated for some of the relatively mundane situations such as exceeding component utilization thresholds. However, the majority of complex tasks were left to the expertise of the IT management staff. This dependence on human interpretation and human action resulted from the inability to capture and automate all the facets of workload characteristics, configuration attributes, and decision experience into appropriate knowledge bases. Fairly recently, knowledge bases have been developed and decision facilities are being implemented.

The advent of the PC, client-server computing, and numerous other changes,

has de-mystified IT management. And, many IT organizations have developed strong partnerships with the business units they support. However, Traditional IT management still retains strong ties to its heritage and continues to exhibit the following fundamental attributes:

- Management and optimization of real in-house assets
- Component/asset based metrics
- Component/asset based objectives
- Vendor tools used to augment DIY tools and processes

Virtualization Phase: This is Saugatuck's term encompassing the IT management skills, tools, and processes required by adopters of IT infrastructure virtualization.

As detailed in Saugatuck's newest 20-page Research Report [*The Many Faces of IT Virtualization: Understanding a New IT Reality*](#) (SSR-420, 28Dec07), IT virtualization poses dazzling promises of reductions in complexity and costs of IT infrastructures. As a result, IT virtualization has become the hottest topic within IT management in many years and its adoption is rapidly expanding.

However, the savings from IT infrastructure virtualization are not free. Implementation of virtualization poses new challenges for IT management skills and processes. These challenges are primarily driven by the additional complexity and abstraction which is incurred when an IT infrastructure is virtualized.

This complexity of virtualization magnifies the difficulties of managing performance objectives and inter-dependencies of the concurrent workloads of typical users. Thus, the dependence on human interpretation and human action in Traditional IT Management is not really viable in the Virtualization Phase. Appropriate data must be collected, interpreted, and actions implemented automatically.

Key attributes of the Virtualization Phase of IT management are:

- Management and optimization of real and virtual in-house assets
- Component/asset based metrics
- Selective use of business oriented objectives
- Vendor tools used to augment previous DIY processes

SaaS Infusion Phase: This is Saugatuck's term encompassing the IT management skills, tools, and processes which will be required by adopters of SaaS offerings.

Similar to IT virtualization, adoption of SaaS holds the promise of reduced IT costs. SaaS also offers additional attractions such as more rapid implementation of new application functionality.

For years, users have been utilizing out-sourcing providers for operation of selected workloads, business processes, and IT services (such as "help desk"). Integration and management of these external processes have presented new challenges to IT management. These challenges were frequently surmounted by new skills, new processes, and even additional staffing. In many ways adoption of SaaS poses challenges much like those of



adopting out sourcing.

As a result, the SaaS Infusion Phase of IT Management demonstrates the following characteristics:

- Continued management and optimization of real and virtualized in-house assets
- Expansion of business oriented objectives
- Vendor tools and services used to augment previous DIY processes
- New tools and skills for SaaS selection, contract negotiation, and integration with in-house application systems
- New tools, skills, and services for monitoring SaaS vendor SLAs

Hybrid Stage: This is Saugatuck's term encompassing the IT management skills, tools, and processes which will be required by users who have adopted both IT Virtualization and SaaS.

In the Hybrid Stage IT management will evolve to focus on efficient, dependable delivery of services. Of course, the service-oriented structure must still be founded upon infrastructure components. But, the costs of components and the high reliability/availability resulting from the technological state-of-the-art of hardware and software, no longer demands a human component-focus. The result is that the IT management staff must evolve to understand business-oriented objectives.

As the name suggests, the Hybrid Stage poses many of the challenges of the Traditional Stage along with those of the Virtualization and SaaS Infusion Phases. The key characteristics of the Hybrid Stage are:

- Continued management and optimization of real and virtualized in-house assets
- Primarily focused on business oriented objectives
- Vendor tools and services used to replace previous DIY processes
- Tools, skills, and services use for SaaS selection, contract negotiation, and integration with in-house application systems
- Tools and services used for monitoring SaaS vendor SLAs

Note: Please see Saugatuck Research Perspective "[IT Management: Necessary Evil to Business Process Necessity](#)", STR-400, 29Oct07, for additional explanation of the factors underlying the evolution of IT management.

As depicted in Figure 1, the Virtualization and SaaS Infusion Phases will overlap, and the typical customer will likely move through them largely in parallel. While every user IT organization will follow its own evolutionary path and timing, broad groups of customers will have common traits.

Large enterprises with aggressive technology plans will likely exhibit the following adoption/progression timing:

- Traditional Stage – Through approximately Mid-2007
- Virtualization Phase – Early-2007 through YE2010
- SaaS Infusion Phase – 2008 through YE2010
- Hybrid Stage – YE2010 and beyond



Similarly, medium enterprises with average technology plans will likely exhibit the following adoption/progression timing:

- Traditional Stage – Through approximately YE2007
- Virtualization Phase – Early-2008 through YE2011
- SaaS Infusion Phase – Early-2008 through YE2011
- Hybrid Stage – YE2011 and beyond

As explained above, progression through each Phase and Stage will require enhanced IT management skills, new/expanded tools, training, and services.

For example, traditional IT Problem Management must be expanded to address the challenges posed by the Virtualization Phase. These challenges include mapping/translation between virtual state/status information and real state/status information; between virtual resources and real resources; etc. The SaaS Infusion Phase requires tools to be further enhanced to include mechanisms to automate problem identification and tracking of incidents involving SaaS offerings. This should include automated monitoring compliance with contract and SLA commitments. This should also include automated collection of appropriate information to enable a SaaS vendor to quickly address any issues involving performance, integration with in-house systems, etc.

At the same time, back-up/disaster recovery will also undergo changes. The Virtualization Phase involves functionality (such as providing the ability to run an Operating System, without change, on a server and device configuration with different characteristics) which can greatly simplify the challenges in traditional back-up/disaster recovery. However, the SaaS Infusion Phase and the Hybrid Stage involve new challenges such as qualifying appropriate back-up/disaster recovery procedures and facilities during contract negotiations with a SaaS provider. Further, for workloads that support core business systems, the user may need to plan for the SaaS provider to suffer a catastrophic technological or business failure. This would entail access to current copies of data files, application source code (including any user-specific modifications) and the Middleware and Operating System on which the application is operated by the SaaS provider.

Other traditional IT management disciplines (e.g., configuration/change management, performance management, security management, etc.) will experience their own unique evolutions in functional breadth and depth during each Phase and Stage.

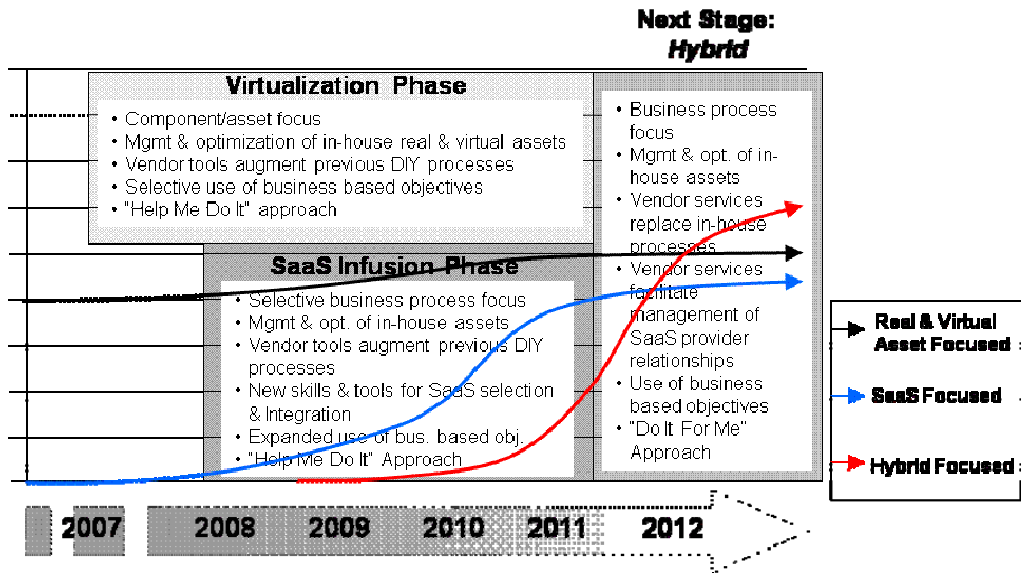
Net Impact

Each Phase and Stage of IT management evolution will offer different and significant challenges to user IT organizations. Thus, the challenges posed by the Virtualization Phase, the SaaS Infusion Phase, and the Hybrid Stage of IT Management will drive different and compounding opportunities for vendors of IT management products and services.

Figure 2 provides Saugatuck's current estimates for sizing and timing of relevant IT management market opportunities.



Figure 2 – IT Management Evolution: Progression & Opportunity



Source: Saugatuck Technology

Saugatuck has characterized the opportunity curves based on discussions with users and vendors. For example, we believe that the Virtualization Phase will fuel opportunities over the next two to three years. These opportunities will range from requirements for solutions in problem and performance management to requirements for solutions in resource accounting and chargeback.

Thus, as shown in Figure 2, Saugatuck estimates that the Virtualization Phase will cause a 25 percent growth in the Traditional IT Management opportunity between 2008 and 2011. The basic requirements for this opportunity growth are articulated above. However, another key driver is the shift in overall approach from “Do It Myself” to “Help Me Do It”. This will yield broader adoption of vendor tools and services.

Also shown in Figure 2, we believe that the opportunity for IT management tools and services related to the SaaS Infusion Phase will grow rapidly between 2009 and 2011 and will almost match the opportunity for Traditional IT Management tools and services. The primary requirements for offerings in this arena are explained above. However, in addition:

1. IT organizations will become more aligned and attuned to the business objectives of the business units they support. This results from SaaS offerings being closely tied to business processes. This transition from a traditional (i.e., component) focus to a business process (i.e., service) focus will require substantial changes in the typical IT management staff education, inter-personal communications skills, etc. For some IT organizations this re-alignment was initiated during the Traditional Stage.
2. IT organizations will begin to shift their fundamental approach from “Help Me Do It” to “Do It For Me”. This shift will further broaden the

adoption of IT management services and the use of Managed Service Providers (MSPs)

Lastly and most notably, Figure 2 indicates that the opportunity for IT management tools and services related to the Hybrid Stage will surpass the total opportunity for traditional tools and services. Again, the primary requirements for offerings in this arena are explained above. However, there are additional drivers for the relatively large sizing of the opportunity associated with the Hybrid Stage:

1. The Hybrid Stage is effectively a compendium of the Virtualization Phase and the SaaS Infusion Phase. Thus, the IT management complexities and requirements experienced during those phases will continue on into the Hybrid Stage;
2. IT organizations will continue the transition from “Help Me Do It” to “Do It For Me”. This implies continued adoption of SaaS-based IT management offerings and of MSPs.
3. IT organizations will continue to become more aligned and attuned to the business objectives of the business units they support. For some IT organizations this re-alignment was initiated during the Traditional Stage. Others will begin re-alignment in the Virtualization Phase, while many will begin during the SaaS Infusion Phase and will complete the re-alignment in the Hybrid Stage.

The evolution of IT management from Traditional through the Virtualization and SaaS Infusion Phases to the Hybrid Stage will present formidable challenges to existing IT management skills and processes. Surmounting these challenges will require experience, increased or transformed functionality of tools, and changes in IT management alignment and approach.

As a result, the adoption of Virtualization and SaaS offerings will be dependent on the ability of IT management to overcome the associated challenges. Thus, the opportunities for vendors in the IT management arena will abound and will shift from traditional on-site tools to services and SaaS offerings delivering the processes of IT management.

User recommendations: Progression through each Phase and Stage will require enhanced or new IT management skills and new/expanded tools. Fundamentally, two concurrent transitions will occur in the typical IT management organization:

1. IT management will evolve from being focused solely on components/assets to being focused primarily on business processes;
2. IT infrastructures will increasingly include virtualization and services (including IT management services) and business processes performed by SaaS providers; and

Thus, IT management and support must evolve to supporting business processes, negotiating relationships with SaaS vendors, ensuring integration of SaaS offerings with in-house application systems, and monitoring SaaS vendor SLA compliance.



Vendor recommendations: IT infrastructures will increasingly include virtualization, business processes supported by SaaS offerings and IT processes performed by SaaS and/or services providers. IT management will be tasked with managing both the IT infrastructure and the business processes it supports.

Vendors should understand the implications of the evolution of customer IT management. Opportunities for traditional and new vendors abound in supporting and facilitating this evolution. Customers will need:

- *Extensions to existing tools* – In the Virtualization Phase, IT management will strive to manage workloads on virtualized infrastructures. Workload managers, resource tracking, etc. must be expanded. In the SaaS Infusion Phase, IT management must include ensuring smooth integration with in-house application systems.
- *Training* – In the Virtualization Phase, IT management must understand the benefits and offerings for the various form of IT virtualization. In the SaaS Infusion Phase, IT management skills must include negotiating relationships with SaaS vendors. Vendors should offer user training to help accelerate competency and adoption of virtualization and SaaS offerings.
- *Services* – The Virtualization and SaaS Infusion Phases and to an even greater extent, Hybrid stage will offer a compounding opportunity for IT management services. This opportunity will be predominantly driven by the transition from the Traditional “Do It Myself” through “Help Me Do It” to “Do It For Me” approach to IT management.

About This Research

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