IBM's *Tivoli Foundations* Deliver Versatile Service Management Solutions Optimized for Mid-Tier Environments

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EMA™

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Executive Introduction

While most of the management marketplace has targeted high-end enterprises seeking scalability and breadth of functionality in the management of critical IT services, smaller and mid-tier businesses until recently have been largely left out. Economics has played a strong factor here, as IT budgets in smaller companies have naturally limited investments in complex platforms that are typically hard to deploy and administer. Moreover, the industry has favored functional complexity over clear-path usability in most cases. The rule in the industry has often been to overdevelop capabilities so that in many if not most enterprise deployments, only about 20% of potential functionality is actively in play. When these design points are applied to mid-tier and smaller businesses, the end result is usually failure – often failure to get past even the initial stages of deployment.

But new Web-centric technologies, a rising level of process awareness across IT, and a new focus in vendor innovation towards more holistic, service-centric approaches to management and automation – are beginning to transform this bleak picture into a sunnier landscape. This progress is all the more needed, as smaller businesses compete with larger businesses across extended global markets, supply chains, and partnerships in which requirements for IT service performance have become ever more critical and unforgiving. Nonetheless, virtually all of the product innovation to date has come from small companies seeking niche markets rather than larger brand names in the IT management industry. So it is a significant moment in the industry when IBM steps into the mid-market ring with two richly functional solutions optimized for the low-end, mid-market buyer. This report will examine the likely impact to customers and to the industry as a whole of IBM's new solutions in context with mid-market requirements and technology trends.

The Mid-Tier's Unmet Requirements

For decades management software solution providers have eyed the mid-tier and small business market as an untapped growth opportunity. And for decades most vendors have failed to deliver the right mix of function and ease of use/deployment/and administration for mid-tier buyers. To some degree, this has arisen out of confusion over what mid-tier adopters really needed. These failures were also reflections on less evolved, more fragmented management architectures than those that are coming of age today. And in fact, mid-tier and small business adopters have often themselves become confused given industry misdirection and convenient but sometimes false assumptions about how to tackle their IT problems.

What is the *Mid-Tier*?

While small and mid-tier market segments are naturally defined by company size, in reality size-based assumptions can be misleading even if they seem obvious. ENTERPRISE MANAGEMENT ASSOCIATES® (EMA™) analysts chart mid-tier as more than 250 employees up to about 5,000, with albeit some significant variations just in size from such a wide ranging group. But even IBM's narrower focus on the mid-tier – fewer than 1,000 employees – reveals astonishing variety based on business model, vertical, and most of all level of IT maturity.

There are lessons for you, if you're in this group, to keep in mind:

- Before making any technology investment, do an assessment of where you are in terms of business requirements, maturity level, and existing investments. Just because your shop is small, doesn't mean that you don't have processes (formalized or not) in place and unique business models to serve. EMA has seen mid-tier adopters too often succumb to the notion that just because they have limited resources, they can adopt a short-term, tactical approach to planning technology investments, which will almost invariably lead to sub-optimal results. In all fairness, large enterprises often do this as well, albeit they generally claim to know better.

- Ironically, perhaps, EMA has seen mid-tier business progress far more quickly than large enterprises when there is strong leadership directed at process and organizational efficiencies. The reason for this is that smaller IT organizations don't have the same entrenched fiefdoms that larger enterprises do, and so improved maturity levels and a more service-centric approach to management can be achieved in dramatically shorter timeframes.

- The same can be said about attention to enabling technologies such as process automation, application dependency mapping, CMDB support, and analytics. Some of Enterprise Management Associates' most successful, documented stories of advanced technology adoption come from smaller businesses with high levels of IT maturity and clearly defined program and goals.

Mid-tier Requirements are Consistently Substantial

On the other hand, even though there is arguably far more diversity in maturity levels and IT organizational models within the mid-tier than in very large enterprises, one thing is firmly consistent: requirements for mid-tier IT performance are just as stringent as they are for larger enterprises. This is because mid-tier and small businesses live in the same macro-economic universe, with global competitive pressures across supply chains, partner relationships, and geographical opportunities for growth. Limited resources are no excuse for you to be the "weakest link" in a business ecosystem for very long and get away with it.

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stringent as they are for larger enterprises.

Moreover, expectations for user satisfaction are continually on the rise. This quote from one mid-tier organization regarding a User Experience Management initiative is typical: "Google has set the expectations for end-user experience. It takes a fraction of a second to get hundreds of thousands of results. Setting expectations realistically is important. Make sure the customer knows what it is going to cost to get Google-like performance."

Yet another challenging factor in the global IT landscape is frequency of change – which has increased orders of magnitude in recent years as new services are provisioned more frequently, and infrastructure updates and changes occur at a much accelerated rate. New technologies for virtualization across domains, as well as Web 2.0 and Web Services application designs, make these changes to applications and the infrastructure fully dynamic and real-time. Managing that changing environment – often across service provider dependencies—responsibly and efficiently places added pressure on mid-tier adopters with limited IT resources.

And finally, business pressures and global market opportunities are driving businesses themselves to morph more quickly than in the past, in many cases leveraging IT services in creative ways to optimize business infrastructures or establish new, value-added services. Mid-tier businesses and organizations are especially prone to seek new ways to communicate, partner, and extend customer reach through existing and new IT services, as these tend to level the playing field in competing against larger enterprises.

Service/Application Performance Management

It's almost axiomatic among mid-tier and small businesses that adopting IT tools to manage application services will lead to high levels of complexity, confusion and cost, or else will be affordable, tactical and fragmented. A typical quote from one IT respondent sums this up: "Most management software is hard to use and configure, especially when it supports multi-brand infrastructures. So you either get relevance (multi-brand), or easy to use point solutions." (EMA custom research, 2008)

This problem is only aggravated by the fact that fragmented toolsets reinforce fragmented ways of working – "We need to find some kind of consolidation. Everybody's doing something different. We need to stop that." (EMA consulting, 2008). The operational inefficiencies from siloed processes and toolsets invariably outstrip the costs of making well-planned technology adoption models aimed at a more unified, service-centric approach to management.

Mid-market adopters do face clear challenges in applications and infrastructure performance management as indicated in Figure 1, where *ease of deployment, ease of use* and *ease of integration* outstrip even proactive prevention and end-to-end diagnostics, which are higher priorities among enterprise buyers.

Which of the following net management needs are most unmet by the industry (Q9).

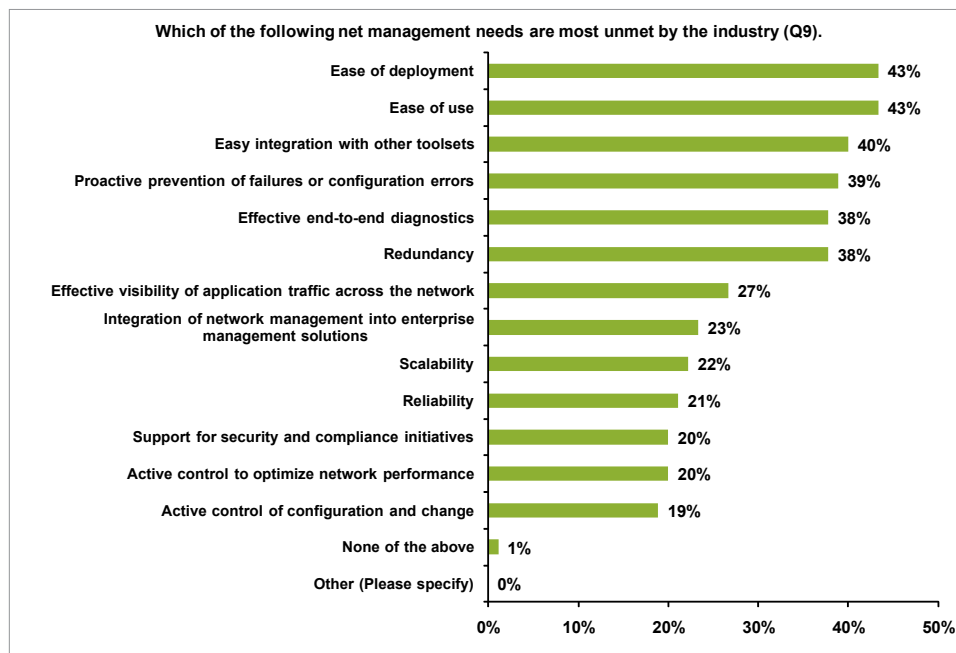| Need	%
Ease of deployment	43%
Ease of use	43%
Easy integration with other toolsets	40%
Proactive prevention of failures or configuration errors	39%
Effective end-to-end diagnostics	38%
Redundancy	38%
Effective visibility of application traffic across the network	27%
Integration of network management into enterprise management solutions	23%
Scalability	22%
Reliability	21%
Support for security and compliance initiatives	20%
Active control to optimize network performance	20%
Active control of configuration and change	19%
None of the above	1%
Other (Please specify)	0%

Figure 1: Unmet needs for mid-tier adopters in infrastructure management

Service Desk

Issues in service desk adoption in the mid-tier are just as critical, and in some cases even more so than application management, as basic support for mid-tier and small business end users is central to every business model and every company. On the other hand, tight resources in this market can lead to situations where the choice of service desk technology is too minimal to be effective, or even non-existent in some environments. A parallel problem that some in the mid-tier wrestle with, conversely, is investments in complex and hard-to-use service desk options that typically go unused, or drastically under utilized, often at great opex and capex expense.

In 2009, EMA research showed that for mid-tier organizations of fewer than 999, the service desk typically consists of five to six professionals, supporting an average service request load of 250 a month with 15% at more than 5,000 service requests, while 69% have plans to expand the role of their service desk in both technology and organization[1]. It's also worth pointing out that you in the mid-tier share similar priorities for service desk functionality with larger enterprise adopters, but with a higher ranking for customer satisfaction surveys (see Figure 2).

Q33_1 Which of the following IT/Business management capabilities are important to your organization's help/service desk operation? by Q4_1 How many employees are in your company worldwide? (999 or less versus All Others)

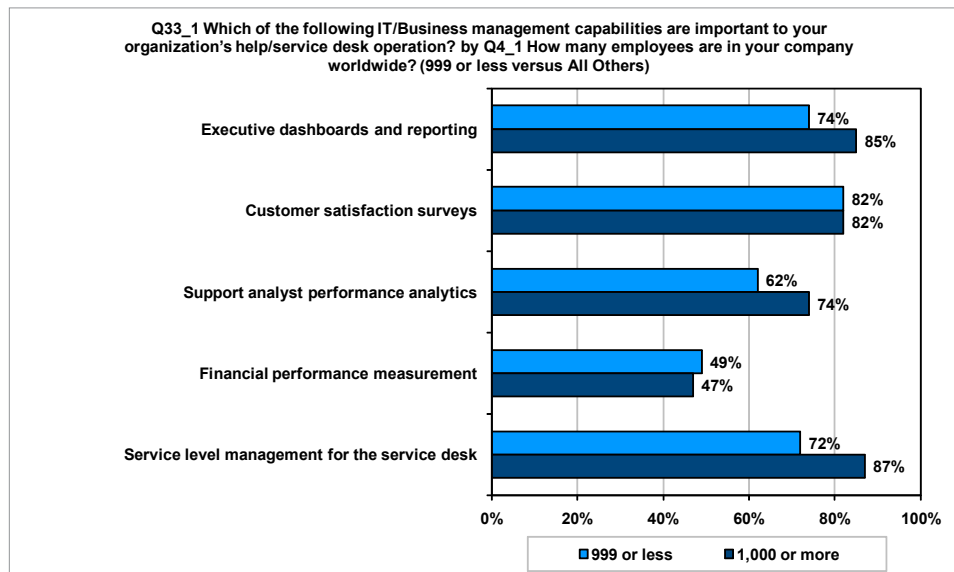| Capability	999 or less	1,000 or more
Executive dashboards and reporting	74%	85%
Customer satisfaction surveys	82%	82%
Support analyst performance analytics	62%	74%
Financial performance measurement	49%	47%
Service level management for the service desk	72%	87%

Figure 2: Service Desk functional priorities for mid-tier adopters parallel those of larger enterprises but with a greater priority for customer satisfaction surveys

1 *"The Aging Help Desk: Migrating to a Modern Service Desk,"* EMA, 2009
http://www.enterprisemanagement.com/research/asset.php?id=1439

Selecting Management Technologies for the Mid-Tier

When selecting technologies for mid-tier IT environments, a checklist of design criteria can be useful. While each deployment has some unique requirements, there are a few generic things to consider:

- *Time to deployment* – Don't leave this up to the vendor; make sure it's evaluated in as real an environment as possible. Time for deployment should include a look ahead to assess the toolset's ease of administration.

- *Functional overload* – How well does the functionality map to what you will really use in the present and foreseeable near term? Tools can be too broad, too deep, or just too complex. On the other hand, defaulting to familiar point tools can create an illusion of efficiency while often resulting in just the opposite.

- *Support for virtualization* – While this is becoming more pervasive, don't take this for granted. The right tools can not only help you to proactively monitor and manage virtualized environments, but also help you to decide where virtualization is optimal for you and where it isn't such a good idea.

- *Support for automation* – From workflow to automated diagnostics, automation can be a great asset in creating operational efficiencies and minimizing risks.

- *Governance for the mid-tier* – in ITIL v3's Service Lifecycle Management, "Continual Service Improvement" is one of the established libraries. Just because you have finite resources doesn't mean you shouldn't seek out process improvements – chances are you can capitalize more quickly on them than your larger brethren.

- *Extensibility and growth without "the pain"* – If you're mid-tier, there are especially good chances that the business you support will grow, requiring that you find a way to grow along with it. Look for technology investments that can support that growth without creating a chasm of cost and complexity that you'll have to walk across as you evolve in size towards the next stage.

The Industry's Response – Some Areas of Innovation

You should be encouraged to know that the industry really is doing its best to catch up to your mid-tier needs. Listed below are five of the more promising areas to seek out good solution fits for your particular requirements:

- *Integrated suites for cross-domain correlation* – Siloed technologies for network, systems, applications, or database management are coming together for consolidated event management and service impact management.

- *Infrastructure-to-service integration for true service management* – Don't give up on the idea of dynamic discovery capabilities capable of supporting a better linkage between applications and your infrastructure. These technologies are not yet perfect and will require some manual professional attention, but getting the right balance between dynamic discovery and manual assessments can save you a lot of time and help to minimize risk.

- *Extensible service desk functionality* – this is also a high growth area for mid-tier adopters and one with a lot of innovation as Help Desks are evolving towards Service Desks. This means additional support for process automation, asset management, and better integration with operational management suites, as well as classic incident, problem and service request management.

- *Integrated change process control and service assurance* – Linking configuration and change insights with service performance needn't be an unwieldy combination of software solutions bolted together with lots of customization at extreme expense. More and more innovations are evolving to help you address this critical set of insights, as change impacts service performance, and as well-monitored service performance can validate that changes have been made effectively.

SaaS offerings – Software as a Service is a natural for mid-tier and small business adopters as it all but eliminates many deployment problems and most administrative issues. It also allows for seamless updates with new management functionality.

IBM Tivoli Foundations

On August 14th, 2009, IBM introduced *IBM Tivoli Foundations* with an initial focus on bringing mid-tier adopters applications and infrastructure performance management, and service desk capabilities in service request, incident and problem management. The move is a bold one for IBM, but was developed carefully, with well targeted architectural and design criteria in conjunction with significant dialog from customers, partners and resellers.

The two solutions, *IBM Tivoli Foundations Application Manager (TFAM),* and *IBM Tivoli Foundations Service Manager (TFSM),* are packaged as software appliance offerings but with well-thought-out integration capabilities between the two, as well as those integrations planned across other IBM and third-part management software choices. The solutions will also be available as a SaaS offering from IBM partners, with future directions for IBM to provide its own SaaS alternatives. IBM's pricing is competitive with deployments starting at a little more than $20,000 each for TFAM or TFSM – especially for those mid-tier organizations where IT services provide a premium value in business competitiveness.

Tivoli Foundations' Foundations

The Tivoli Foundations architecture leverages Lotus Foundations which provides unique strengths in self-monitoring, automatic back up, strong security, built-in VPN support (which is especially valuable for partners offering SaaS managed services) and a well developed Web user interface for easy administration. Beyond this, IBM has chosen to invest in core product functionality originally developed for larger enterprises such as Maximo and Service Request Manager for Service Manager, and TADDM, ITCAM and Netcool technologies for Applications Manager. Once again, this positions Tivoli Foundations as being particularly well suited for mid-tier IT organizations in verticals, or supporting business models, where IT service performance and business advantage coalesce, and where risk minimization and easy adaptability to growth are at a premium.

Tivoli Foundations Application Manager

In studying adoption trends and market requirements, EMA has prioritized five key technology areas as being particularly relevant to optimizing cross-domain correlation for service management. They are:

1. Breadth of information gathering – for centralized analysis
2. Advanced correlation and analytics
3. QoE – User Experience Management
4. Application dependency/service impact
5. Automation

Significantly, TFAM meets all of these criteria, although it's worth noting that criteria 3 and 5 are enhanced when it's integrated with Tivoli Foundations Service Manager for workflow and survey support. Moreover, TFAM does all this while being operational within an hour to discover and manage the environment.

TFAM's core discovery is agentless, credential-free, and based on Nmap (Network Mapper), originally used to scan for vulnerability assessments, but increasingly finding its way into more mainstream infrastructure discovery and performance management. Through a tiered scan and interrogation process, TFAM discovery finds network-connected infrastructure (network devices and systems) and infrastructure interdependencies, and then discovers used and unused ports to further interrogate for OS and other asset and inventory criteria in support of infrastructure asset management. This discovery service also forms the basis of initial phase application dependency mapping capabilities of TADDM/CCMDB to support service impact insights between applications and the infrastructure.

Other critical functionality for Tivoli Foundations Application Manager includes:

- Monitoring of application and middleware components

- A "Situation Editor" that can be used to customize priority areas of interest for visualization, alerting and dependency mapping

- Out-of-the-box alerts, including proactive alerts that can call attention in advance to resource utilization issues

- A customizable user interface for bringing together critical data based on individual preferences. This interface includes strong drill down and navigational capabilities, as well as well designed graphics (see Figure 3)

- Pre-defined views, or "workspaces" to key on prioritized problem sets to support individual priorities and enhance communication across IT. Workspaces are easily defined and linked to routine operational tasks

- Built in "expert advice" for solving performance and availability problems, which can be customized via Situation Editor

- Diagnostic task automation which comes out of the box, or that can be individually defined

- Network device monitoring to capture the key availability and performance characteristics of network interfaces. This includes metrics such as down-time, total number of packets, throughput, number of discarded packets, errors at network devices, etc.
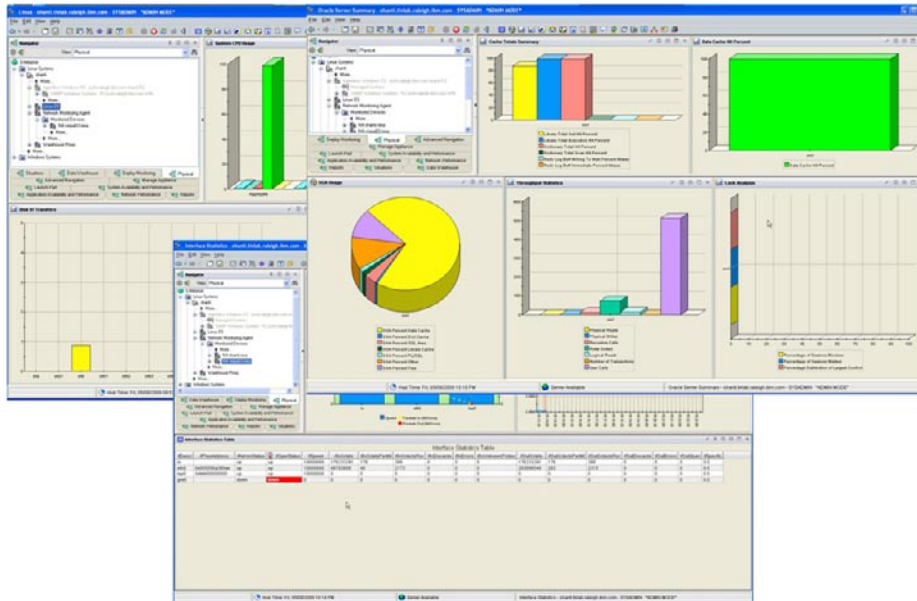
Figure 3: Drill-down for system performance in Tivoli Foundations Applications Manager

Tivoli Foundations Service Manager

TFSM leverages Tivoli Service Request Manager technology and provides service request, incident and problem management as defined in ITIL v3. IBM has placed a great deal of attention to making Tivoli Foundations Service Manager "consumable," including quick deployment and shortened training times. IBM estimates that TFSM can be up and running in several hours or less. TFSM is designed for easy assimilation of organizational information, as well as integration with Microsoft Active Directory and other third-party directory sources. This includes the capability to coordinate across multiple databases for integrating HR and locational information. IBM seeks to reduce the typical four-to-six week training time by about half for help desk personnel, in part through point-and-click instructions for well defined queries – e.g., *"How do I submit a ticket?"* or *"How do I search the knowledgebase?"*

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Another part of this emphasis on "consumability" is "out-of-the-box" best practices, including workflows, templates, key performance indicators, queries, and reports – tailored to small and medium business environments. Some of the other capabilities within TFSM include:

- Dashboards with configurable portlets to display Kep Performance Indicators (KPIs).
- A drag-and-drop approach to create process workflows, along with preservation of workflow components or "artifacts" for reuse and reassembly to rebuild new workflows or modify existing workflows.

- Knowledge management functionality that can be populated with knowledge solutions/articles for supporting both the help desk agent and the end user. Solutions from knowledge content providers such as RightAnswers@ can also be imported to provide additional knowledge management capability.

- A Web-based portal for bulletin boards to inform users of availability and status of IT services.

- Strong support for self-service when problems arise, so that knowledge can be shared effectively with end users/customers in order to help them find the answer to a problem themselves.

- A remote control capability for help desk professionals to take over end-user workstations/ laptops to diagnose and remediate end-user problems. This functionality comes with a recording capability to support any activity relevant to compliance audits in industries such as healthcare and financial services.

- A customer satisfaction survey that can be customized to fit unique user experience management initiatives.
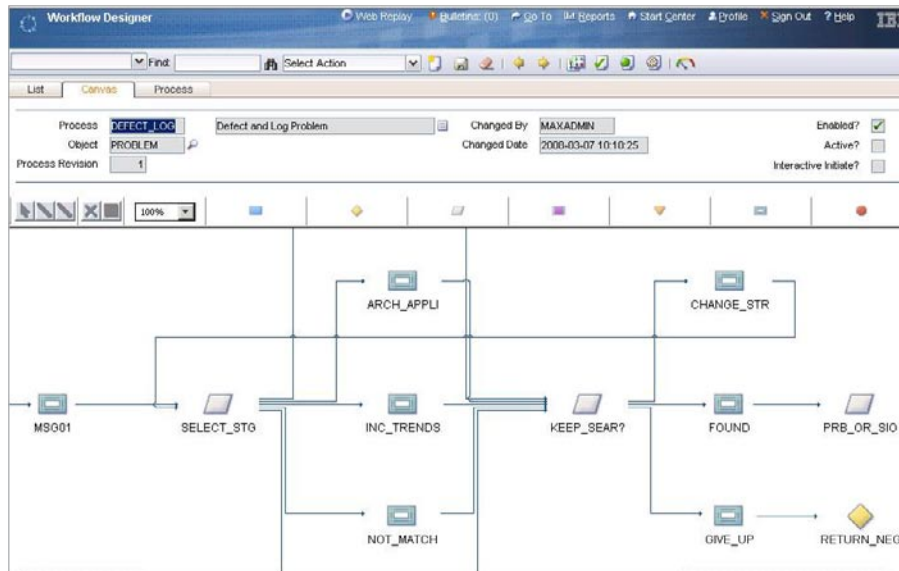

Figure 4: Defining and routing workflows in Tivoli Foundations Service Manager features drag-
and-drop design to achieve automation in support of multiple user roles

Integrations

Tivoli Foundations Service Manager integrates with Tivoli Foundations Applications Manager, which brings operations and front-end service desk capabilities together to support a more unified approach to service management. In particular, it provides added strengths in terms of process automation and problem resolution, and a more holistic approach to managing applications and other services in context with end-user requirements. It also satisfies the top three areas for service desk integration according to EMA research:

1. *Systems management*
2. *Network management*
3. Applications management
4. Security management
5. Storage
6. Voice management /telephony

In the next release, integrations with IBM Tivoli enterprise solutions such as Tivoli Green Data Center, Infrastructure Security Management, Netcool, and TADDM will be available.

Future Roadmap

TFAM and TFSM customers can look forward to SaaS offerings from IBM, as well as from IBM partners in the future. IBM has also designed its Foundations capabilities with a modular architecture that will extend to include such areas as *asset management*, *network and service assurance*, and potentially *security, risk and compliance*, *data center transformation*, and *storage management*.

EMA Perspective

IBM Tivoli Foundations offers rich functionality with a clear and pragmatic path to mid-tier deployments and usage. Modularity, integration and extensibility are also strong positives within the IBM solution set. IBM has identified a customer wish list for networked topology TFAM and integrated inventory in the case of TFSM, as well as more integrated reporting between the two. For mid-tier, a SaaS offering will also be a strong positive as it allows adopters flexibility and choice in incurring costs and all but eliminates overhead for administration.

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Down the road EMA would like to see more defined plans for integrated security management, and third-party toolset integration. There is also an inherent opportunity for IBM to support the management and care of business infrastructures as well as IT infrastructures given Tivoli's process automation engine – a potentially very strong play for progressive mid-tier organizations seeking to achieve new business as well as IT efficiencies. And IBM may also want to consider adopting this resilient combination to support complex business ecosystem environments, where partners, suppliers and service providers come together across multiple business and technology interdependencies. These

are high growth areas – especially for mid-tier organizations seeking to leverage IT services to extend their business reach.

In sum, EMA believes that IBM will make a real difference in mid-tier management technology adoption through its Tivoli Foundations offerings, bringing consumable sophistication and management power to smaller businesses and organizations. IBM's offerings should be especially attractive in those environments where IT services are understood to be critical to business success – such as financial, health care and some manufacturing verticals. Here in particular IBM will clearly challenge the industry to step up to increasing requirements for resiliency, adaptability and extensibility in management solutions optimized for the mid-tier consumer.

About IBM Tivoli

IBM Tivoli software provides smarter solutions and the expertise you need to design, build and manage a dynamic infrastructure that enables you to improve service, reduce cost and manage risk. Built on open standards, Tivoli offers the connectivity and integration needed to help you prepare for changing conditions and keep your business processes operational. Tivoli provides an intelligent, autonomic and virtualized software computing environment that proactively diagnoses your system and repairs problems. Tivoli offerings are backed by world-class IBM Services, IBM Support, and an active ecosystem of IBM Business Partners. Customers and partners can also leverage each other's best practices by participating in independently run IBM Tivoli User Groups around the world — visit http://www.tivoli-ug.org. For more information about IBM solutions for growing mid-market businesses, visit http://www.ibm.com/tivoli/

About Enterprise Management Associates, Inc.

Founded in 1996, Enterprise Management Associates (EMA) is a leading industry analyst firm that specializes in going "beyond the surface" to provide deep insight across the full spectrum of IT management technologies. EMA analysts leverage a unique combination of practical experience, insight into industry best practices, and in-depth knowledge of current and planned vendor solutions to help its clients achieve their goals. Learn more about EMA research, analysis, and consulting services for enterprise IT professionals and IT vendors at www.enterprisemanagement.com or follow EMA on Twitter.

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