CLABBY ANALYTICS

Research Report

OMEGAMON V 5.1 Review: Client-driven Redesign of Mainframe Performance and Availability Monitoring

Executive Summary

When *Clabby Analytics* evaluates mainframe management environments, we examine:

1. The user interface (is it a graphical user interface [GUI] or 3270 command line — or both);
2. The level of integration between management tools (does the product offering have a master screen from which underlying management programs can be launched — and if so, how well are the ancillary programs integrated with one another);
3. Workflow efficiency improvements (does the product make it easier to perform a given management function; does it save the administrator/manager time?);
4. Role-based orientation (can the product be deployed and organized to present mainframe managers with tools germane to their specific jobs — for instance, can the tools be deployed with a database administrator orientation, or a CICS administrator orientation, and so forth); and,
5. The knowledge database (is there one and how does it work?).

We recently had the opportunity to evaluate IBM's new OMEGAMON V5 mainframe management environment. And what we found is that IBM has:

- Greatly improved its 3270 command line interface — adding a sort of color-coded graphical element to its 3270-based screens (IBM calls this new functionality "a GUI on a green screen");
- Integrated its various OMEGAMON modules , placing them all under control of an overview panel from which they can be launched, and enabling these modules to share information more easily;
- Added new features and functions that improve administrator efficiency by reducing the amount of time it takes to perform certain functions. (As an example, IBM has introduced a new "find" command that an administrator can use to locate a specific program, region, or file — enabling that administrator to save time that would be spent manually searching for program/region/file information); and,
- Focused on organizing its management products to address the needs of certain mainframe management roles (such as DBA, systems programmer, etc.) with customized "views" based on organizational roles.

What we did not find in this release of OMEGAMON is an emphasis on creating a knowledge database (an area that mainframe managers and administrators can access to view a history of how problems may have been solved in the past; or where instructions can be left for successive generations of mainframe managers regarding how a specific

enterprise manages various elements of their mainframes). OMEGAMON does offer "built-in problem solving scenarios" which address part of the knowledge database collaborative element that we look for — but not the knowledge historical problem-solving, collaborative, next generation training-oriented knowledge database element that we would like to see.

In this report, *Clabby Analytics* shares our observations and perspectives regarding this new OMEGAMON release.

Background

The IBM Tivoli OMEGAMON family provides a comprehensive performance and availability solution for monitoring, analyzing, and managing mainframe operating systems, databases and other environments — ultimately leading to optimal performance. It detects bottlenecks and other potential problems, identifies the root cause, and proactively resolves performance issues.

The OMEGAMON product suite is comprised of seven specific products:

- OMEGAMON XE on zOS;
- OMEGAMON XE for CICS on z/OS;
- OMEGAMON XE for IMS;
- OMEGAMON XE for DB2 PE;
- OMEGAMON XE for Storage on zOS;
- OMEGAMON XE for Messaging; and,
- OMEGAMON XE for Mainframe Networks.

The OMEGAMON for zOS Management Suite packages several of the OMEGAMON products for simpler ordering, and includes OMEGAMON XE on z/OS, OMEGAMON XE for Storage on z/OS, OMEGAMON XE for Mainframe Networks and OMEGAMON DE on z/OS.

A Closer Look at the New Release: OMEGAMON V5.1

Based upon feedback from over 200 mainframe customers in North America and Europe, IBM determined that the new revision of OMEGAMON needed to focus on:

1. Improving the 3270 interface;
2. Improving maintenance routines; and,
3. Improving the performance of zIIP specialty processors.

To these ends, the first two products being released that address these requirements are IBM's OMEGAMON XE for zOS and OMEGAMON XE for CICS on zOS. These products feature:

- ***Enhanced 3270 User Interface for SMEs*** — a "green screen" GUI that provides an enterprise view of information supported across the entire OMEGAMON family. Through this interface, transactions can be linked across multiple sysplexes, and there is no need to move between multiple screens and monitors. Color highlighting is used to flag problems for quicker resolution. The interface provides easier navigation and fewer screen interactions to accomplish tasks;

- ***Simplified OMEGAMON architecture*** — Tivoli OMEGAMON Manager (TOM) provides a single manager and user interface across the entire OMEGAMON product line with no loss in functionality and simplified management requiring fewer resources. It also directs navigation to other OMEGAMON 5.1 monitors;
- ***Consolidated Database/Customized Displays—*** OMEGAMON 5.1 collects and correlates data from a variety of sources, filters that data and offers customized views based on organizational roles or customer defined problems;
- ***Faster Install/Configuration/Maintenance Monitoring*** — support for self-describing agents, which eliminates the requirement to recycle the monitoring server after application support updates, speeding installation and configuration. This capability eliminates monitoring outages caused by ITM Server recycles, maintenance upgrade errors and application data DVDs or CDs. The version is automatically validated with installed data and framework avoiding inconsistent application data in ITM framework. In addition, Parmgen is used (replaced ICAT) for easier installation and configuration by including autodiscovery and guided walkthrough of required steps;
- ***Usage of zIIP specialty servers*** — in OMEGAMON for CICS decreases resource by offloading CICS SLA processing;
- ***Workload resource groups*** — that can be predefined to establish a set of policies associated with a particular workload. All can be managed from a single OMEGAMON monitor; and,
- ***Built-in Problem Solving Scenarios*** — customizable screens focus on customer defined problems and those identified as high priority will be listed first. Healthcheck and bottleneck analysis is also included.

When examining this new release, the first thing that "jumps out" at the viewer is the revamped 3270 interface. IBM has modernized this interface and streamlined workflows to improve the performance of systems programmers and systems administrators who prefer to use a 3270 interface to interact with and manage mainframe environments. The next noticeable improvement is the level of product integration that has taken place. Instead of having to launch each management product separately, OMEGAMON can now launch various management programs from a centralized control screen. Workflow improvements are also quite noticeable — as are the products new "role-based" workload resource groups. Finally, IBM's built-in problem solving scenarios represent, to us, a step in the right direction toward a knowledge management database. The remainder of this report examines each of these new improvements in greater detail.

The New 3270 Interface

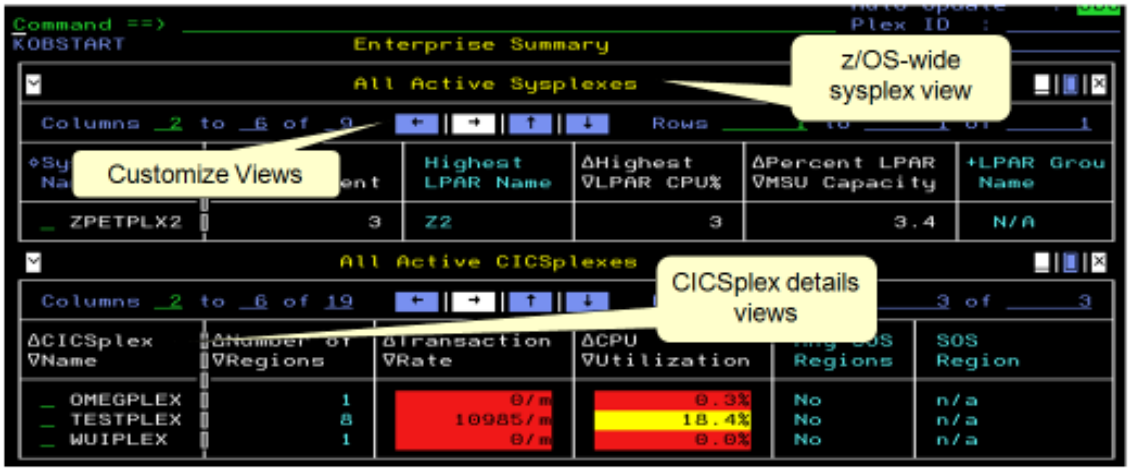
To be clear, *Clabby Analytics* is not a big fan of 3270 interfaces. We find these command line driven interfaces to be cryptic and complex — requiring a higher level (and more expensive level) of mainframe manager to operate them. Still, we recognize that these pneumonic command oriented interfaces make mainframe managers who understand how to use them more productive than those who have to sift through numerous graphics-oriented screens to achieve the same result. And for this reason — improved efficiency — we really like what IBM has done in OMEGAMON V5.1 with its new, graphically-oriented 3270 management display.

For those not familiar with 3270 screens, these were the original "dumb tube" interfaces used to interface with back-end, time-sharing mainframes. They came in various models

ranging from a standard 3278 model 2 to a wide-screen version known as a 3270 model 5. They were known for their ugly "green screen" (green character) interface to the mainframe (although some actually used orange characters to improve readability and reduce eyestrain). Information technology (IT) managers and administrators used 3270s to issue commands, launch activities, and otherwise interface with mainframe subsystems and application environments.

In OMEGAMON 5.1, IBM has taken a new approach to interfacing 3270s with back-end mainframe management information. Instead of poring through a series of green screens to gather and display information, IBM has built a centralized management environment (Tivoli OMEGAMON Manager) from which various activities can be launched. For instance, an enterprise management summary can be created (see Figure 1) that shows what is happening across all active Sysplexes — and can provide CICSplex details — using color coding to show system/CICS status. Further, other customized views can be created to display other activities that a systems manager, systems programmer, or systems administrator may wish to monitor.

Figure 1: The New "Graphical 3270" Interface

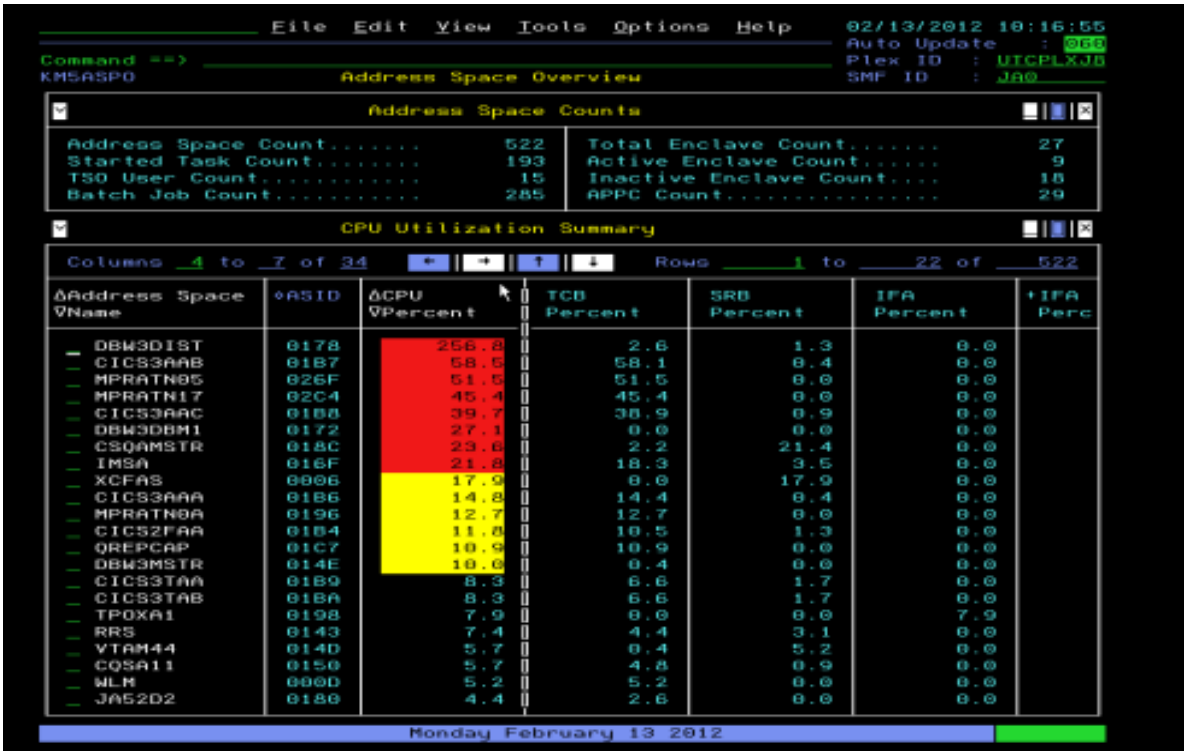


Source: IBM Corporation — February, 2012

> ***IBM data shows that by using this enterprise summary view, IT managers can save 50-75% of the time needed to solve problems. Further, using new configuration/maintenance capabilities, IT managers can reduce workloads that may have taken up to 40 hours a week to only 4 hours a week. IBM data shows that using these new functions, IT managers have seen an 80% improvement in time for installation and maintenance and 30% improvement in time to configure post- installation.***

Other examples of this graphical 3270 interface can be seen in Figures 2 and 3. In figure two, CPU utilization is examined. Notice how some CPUs are highlighted in red (they're reaching their capacity limits) while others are highlighted in yellow — or not at all. When we look at how other graphically-oriented packages display CPU utilization, we see functionally the same thing (a list of red CPUs, yellow CPUs, and green CPUs). So, to us, this new 3270 "graphics" display accomplishes functionally the same thing. Next, look at Figure 3 (this figure shows a full screen view of logical partition activity — again with red and yellow color flags for LPARs that may need attention). A GUI-based monitor would functionally show the same thing (although it would probably not lay it out in the wide screen manner — but rather put it all on one screen with pie charts and other graphics.

Figure 2 — CPU Utilization View



Source: IBM Corporation — February, 2012

Figure 3 — An All-inclusive Wide Screen View

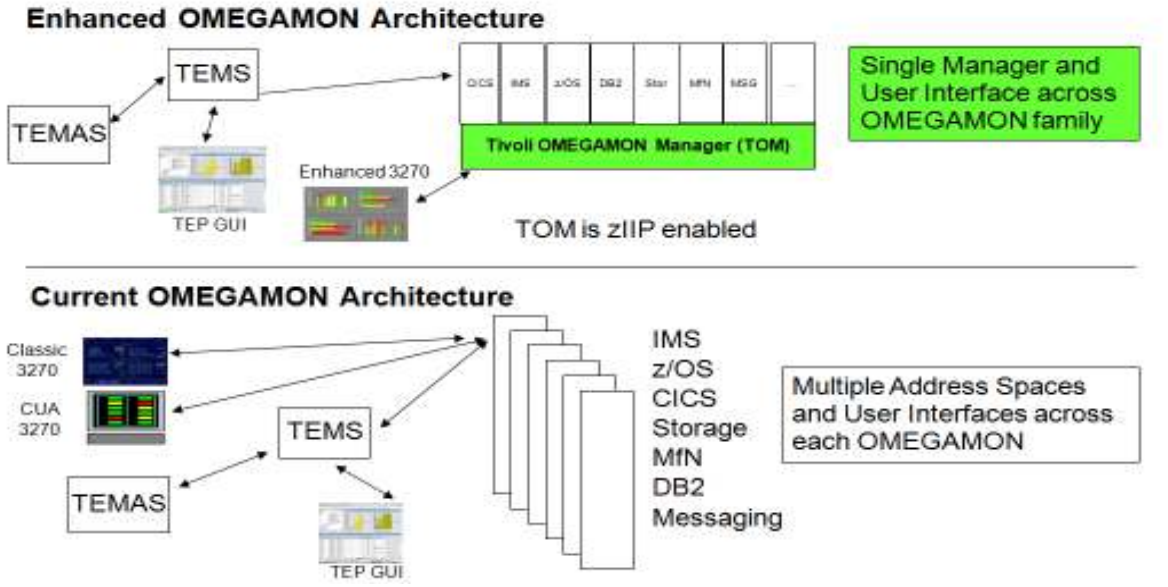
Source: IBM Corporation — February, 2012

> ***To us, these new IBM 3270 screens accomplish functionally the same thing as their GUI equivalents. The 3270 "graphical green screen" approach offers the same information that a GUI screen offers — only displayed slightly differently. What IBM has done with its "GUI on a green screen" is it has allowed some mainframe managers to stay within their 3270 comfort zone while getting the same display benefits that GUI mainframe managers get using graphically-oriented products.***

The Level of Integration

As we said at the outset, when evaluating mainframe management environments we look at five elements — the second of which is integration. As we look at the new OMEGAMON 5.1 implementation, we see that a lot of work has gone into product integration. In Figure 4, notice how the previous version of OMEGAMON (at the bottom of the graphic) had multiple address spaces and user interfaces that needed to be accessed and launched to accomplish various management tasks. With OMEGAMON 5.1, Tivoli OMEGAMON Manager (TOM) provides an integrated launch pad and a single user interface to access and launch a variety of underlying OMEGAMON management products.

Figure 4 — Improved Integration



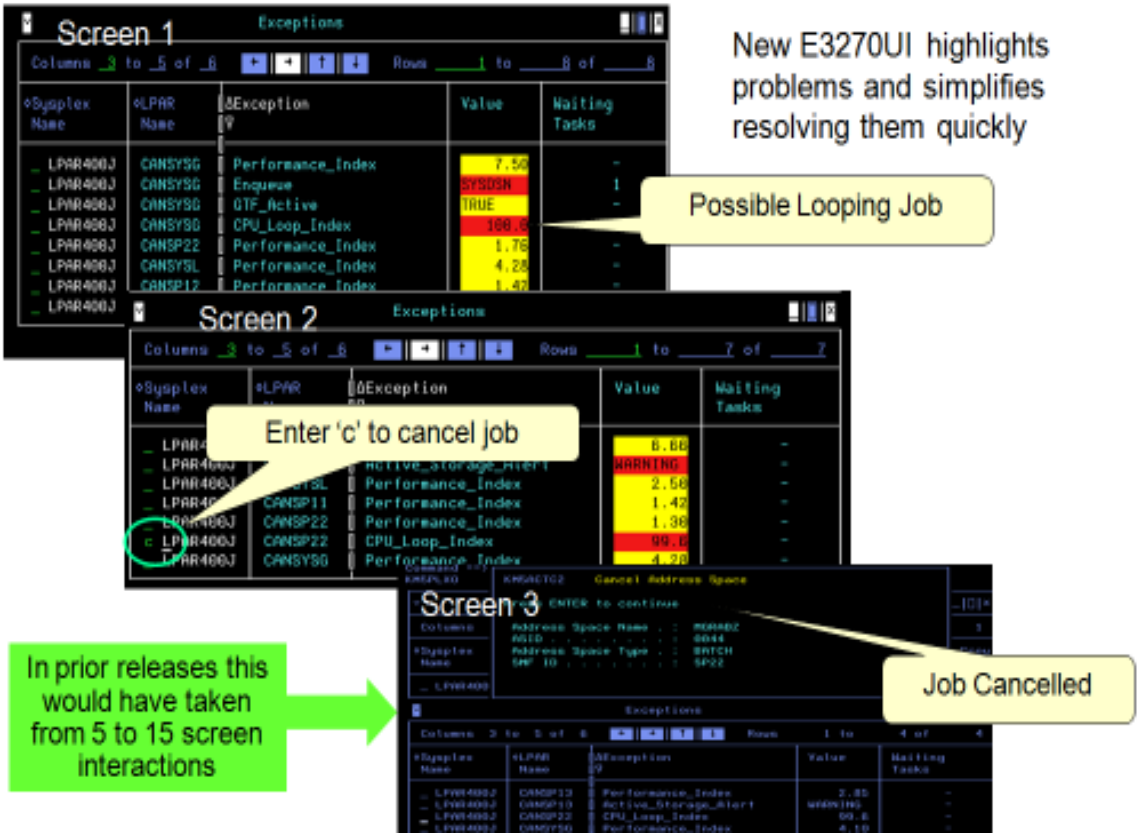
Source: IBM Corporation — February, 2012

Improving Operator Efficiency and Productivity

Our third evaluation criterion for mainframe management products relates to the workflow efficiency improvements a given product might offer. We specifically look at how a given product streamlines management tasks — thus leading to manager/administrator time savings (which translate into lower human labor costs — which then translate into lower operational costs). A closer look at OMEGAMON 5.1 shows numerous productivity/workload streamlining improvements, including one improvement that reduces the path an administrator might have to take to solve a problem down from as many as 15 screens to as few as 3 screens (see Figure 5 — next page).

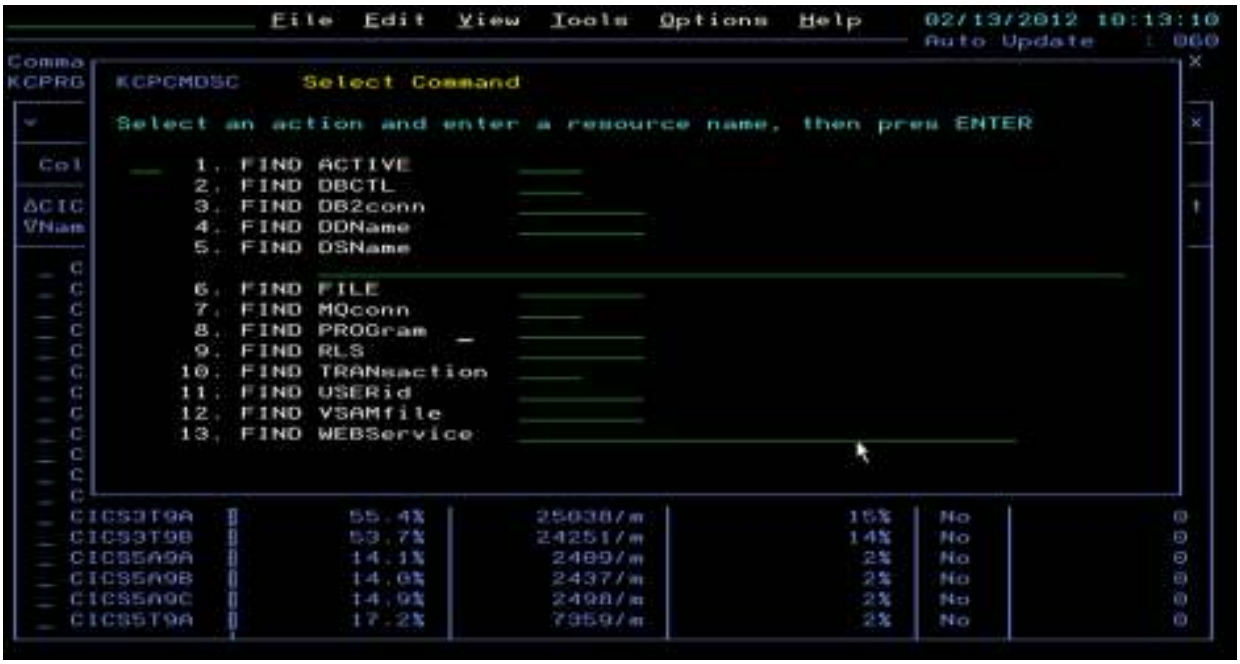
Figure 6 (next page) shows one of favorite productivity improvements in the new OMEGAMON 5.1 release — the new "find" screen. Mainframe managers sometimes have to embark on long searches through many screenloads to find the information that they are looking for. The new find screen saves mainframe managers from having to perform lengthy searches — simply choose the item that is needed and the system finds it for you! IBM claims that this feature can reduce search times from 90 minutes to as few as 2 minutes.

Figure 5 — Improved Productivity and Efficiency



Source: IBM Corporation — February, 2012

Figure 6 — Our Favorite New Feature: the "Find" Screen



Source: IBM Corporation — February, 2012

Another productivity- improving feature can be found in OMEGAMON's new Parmgen feature. Without Parmgen, an administrator may have to manage his or her way through 145 ICAT product-centric jobs to configure 38 components for 1 LPAR. With Parmgen, the administrator would need to go through only 8 Parmgen function-centric jobs to configure components for 1 LPAR (this represents an over 35% improvement in installation and configuration time).

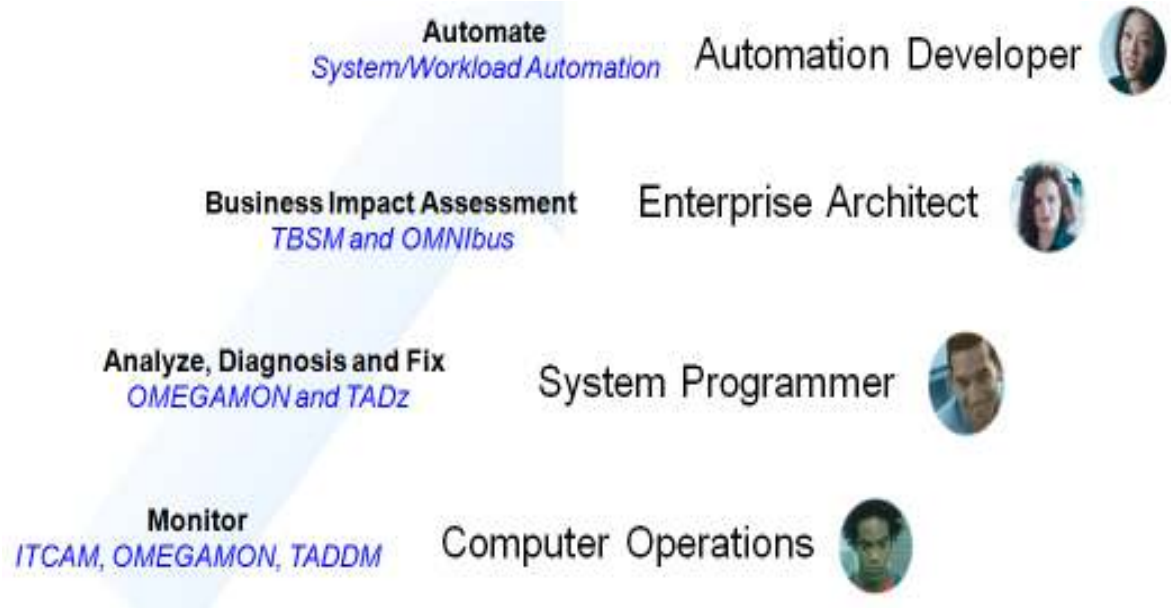
As a final example of productivity improvements in the new OMEGAMON, IBM pointed to an issue in zOS (the mainframe operating environment) that was reduced from up to15 screen interactions to a single screen interaction.

Clearly, IBM focused on productivity improvements in this new revision — and some of the improvements that IBM has seen as it has deployed this product are truly remarkable.

Role-based Orientation

Another criteria that we use to evaluate mainframe management software environments is whether the software can be oriented to certain roles (such as a database administrator, a CICS administrator, and so on). We see OMEGAMON as being positioned as a product for systems programmers and computer operations managers (see Figure 7). But within these roles, we also see additional opportunity for OMEGAMON users to tailor this product for even more specific roles such as those mentioned above by creating customized views that systems managers, systems programmers, or systems administrators may wish to monitor. We would like to see IBM create a library of such views for specific job titles in the future.

Figure 7 — OMEGAMON Role-based Orientation



Source: IBM Corporation — February, 2012

Summary Observations

Clabby Analytics has been covering the application performance management (APM) field for three years. We have written reports on numerous APM products, including reports on IBM's distributed computing oriented Tivoli ITCAM, as well as on other distributed products such as those from OpTier, Netuitive, Nastel, INETCO, CA Technologies (CA APM, Nimsoft Unified Manager), Correlsense, and more. All of these products are graphically oriented.

When it comes to mainframes, IBM offers a graphically oriented environment that performs many of the same functions as OMEGAMON. It is known as TEP (the Tivoli Enterprise Portal). To use this product necessitates that a mainframe manager launch a distributed computing environment — which means that a Tivoli enterprise monitoring server must be configured (at least one — configured as a hub), and a database must be created on a portal server to keep track of activities. With OMEGAMON, a mainframe manager can simply launch 3270 management screens and get right into managing a mainframe environment (albeit without all of the fancy graphical user interface screens).

As it turns out, experienced mainframe managers prefer this 3270 launch-and-go approach. They find traversing through numerous graphical user interface screens to be, at times, annoying. And they like the immediate response they get using their 3270 command line instructions. For this management profile, OMEGAMON is the ideal product for performing performance and availability monitoring on a mainframe.

As for product shortcoming, we found few. Although we don't like 3270 interfaces in general, we really like this "graphical" 3270 implementation. We found many similarities in how a graphical user interface would display data (in columns with red, yellow, or green shading) and how OMEGAMON's new graphical 3270 screens display the same data. As for knowledge management, we liked the way IBM has created built-in problem solving scenarios. These represent a step in the right direction toward a knowledge management database. In the future, we'd like to see IBM build a knowledge management repository that can capture knowledge about how various mainframe managers have solved problems over time in their mainframe environments. We think this will be necessary for "passing the baton" to the next generation of mainframe managers.

In the end, this whole report has been about efficiency and productivity improvements that IBM has made to its OMEGAMON product set. IBM is a recognized leader in APM. This product gives IT managers greater visibility into mainframe operations and tuning — and simplifies workflows, leading to greater manager/administrator productivity. Further, it gives these managers and administrators greater insights into business process flows, enabling IT to better serve business needs (this alignment is also called business service management). Finally, although this is hard for us to say, we really liked IBM's new graphical 3270 environment. This interface provides a path to faster monitoring and problem management and leads to reduced costs, higher availability and improved productivity.

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