IBM

IMS newsletter

Absa Uses VGR to Ensure Online Availability
by Johan Cronje, Absa Consultant for IMS

VGR (VTAM Generic Resources) is the IBM network facility that allows increased availability of the logical image in a Parallel Sysplex. Absa has implemented VGR for its IMS systems and, through a rolling (only one system down at a time) implementation of maintenance and IPLs, has markedly reduced downtime of its IMS production applications.

About Absa

Absa is South Africa's largest retail bank with total assets exceeding 177 billion rand (about $24 billion US). Approximately 1000 branches and 2200 ATMs throughout South Africa provide a full range of financial services to approximately 8.6 million clients (23 million accounts). Absa provides banking facilities and financial services to a wide spectrum of clients with differing banking needs – from individuals and non-profit organizations, to government bodies and large corporations. Any downtime of the Absa online environment has a severe impact on business given that, for instance, a client would rather use a competitor's ATM than wait (indefinitely) for one that is presently unavailable. The same concept holds for branches – downtime causes lines at the teller windows and, the longer the wait time, the easier to convince the client of better service elsewhere. To ensure Absa's competitiveness, the Technical Services department is striving towards achieving the highest possible availability for the Absa production system.

The Absa Online Environment

The Absa Production system is a Parallel Sysplex consisting of three OS/390 (V2.7) images on three different machines (1 x RX5 and 2 x R56) with an IMS on each. The Shared Queues facility in IMS is not used, although data is fully shared between the different IMS systems in the sysplex.

Approximately 280 million transactions are processed each month, with up to 14 million transactions going through on a busy day. The Absa "online day" is between the hours of 08:00 and 16:00 and, during these hours, averages 300 transactions per second with peaks reaching 550 transactions per second.

Transactions originate mainly from branches, ATMs, the Internet and corporate clients. Log on to IMS is mainly an automated process initiated by intelligent workstations and/or servers. Access from 3270 workstations is limited.

Before VGR

Our sysplex implementation in 1995 was planned based on the realization that maximum benefit can only be achieved if applications have no system affinities. Making our applications independent of specific IMS images left us with a requirement to balance the terminal workload. We did not consider using Message Requeuer as we felt it addresses application workload balancing rather than terminal workload balancing. We also did not favour a configuration of a front-end with MSC link connectivity to multiple back-ends. We knew that VGR was in the pipeline, so we planned to implement it as soon as it became available.

In the meantime, all ATMs, LU2, and inbound APPC traffic was processed on one IMS, and the branch terminals split between the other two IMS systems, so that half of each branch's terminals would be on one IMS. Logons were made to a specific IMSid based on rudimentary logic at the branch server level. In the case of a single IMS outage, business could continue, although at a much slower pace. Time was lost in re-connecting terminals until logons could be directed to another IMS using the VTAM Uservar facility. When two IMS systems were down at the same time, it was almost as bad as a total system failure.

ABSA
Today Tomorrow Together

VGR implementation

Since VGR support for APPC is delivered independent of IMS by MVS/APPC, we divided our project into two distinct phases — APPC workload and all other terminals. With the availability of our Internet banking application becoming more and more critical, especially during planned outages and, because it is APPC based, we decided to do APPC first. Most of our external users connect to us using LU6.2 and, because we did not want to be dependent on them making changes to the ACB name, we went for a "big bang" approach. We retained the existing ACB as the generic name and created new ACB names for each system. We implemented the change on each system using the SET APPC commands. The switch-over outage was less than a minute and we were immediately able to receive logons on any system. The only concern about this implementation, is when all (or the vast majority) of logons are to one IMS afterrecycling or an outage.

For the rest of the terminal workload we took a more cautious approach. We again retained the one IMS's ACB as the generic name and converted that IMS to a different ACB so that we essentially had one IMS in the VGR group. This strategy allowed us to discover some performance and operational issues without it being too painful. These issues

left to right: Johan Cronje, Jennifer Pearcey, Chris Heunis, Anton Smit, Carl Moolman (missing)

have since been addressed by the IMS team in the IBM Silicon Valley Laboratory (formerly known as IBM Santa Teresa Laboratory).

We were then able to phase in terminal sharing by adding another IMS to the VGR group, but without changing the logon requests sent up by branch terminals. They were still logging on to the physical IMSid, but the ATMs could be routed to either of two possible IMS systems. When we were comfortable with all aspects of VGR, we phased in a change to the logon ID requests sent from branch terminals. Initially the IMS logon sessions were not balanced, but we soon discovered that the VGR exit, ISTEXCGR, was not implemented correctly on one of the VTAMs. We opted for simple load balancing based on VTAM session counts, as opposed to using MVS Workload Manager or specific user criteria.

Our workload is mainly LU0 terminals and, since we do not use the STSN feature, we were able to specify GRAFFIN=VTAM to allow VTAM to manage any significant status on terminals, thus allowing logon to another IMS after a shutdown/abend. For details on parameters and how to implement VGR for IMS, please see the IBM redbook *Using VTAM Generic Resources with IMS*, (order number SG24-5487).

Implementation of VGR was straightforward, easy and simple, but these are some situations to watch out for, and that might require specific attention or workarounds:

- When a connection to the outside world is through hardware connected to only one machine.
- Connectivity to the outside world is initiated from one IMS and that connection could then be used by transactions initiated on any other IMS.
- When a server-initiated logon ends up on one IMS and the user, requiring that application, was logged on to another IMS.
- A transaction or BMP, which can run on any IMS, that needs to send a message to an LU that is logged on to another IMS. This situation becomes more noticeable when the LU in question is an APPC connection with multiple sessions.
- More terminals connect to the first IMS started up when all IMSs in the sysplex are re-cycled in a rolling fashion (for instance, when maintenance needs to be applied). This situation can occur when the majority of terminals need to be logged on at all times.
- Individual systems could end up on, or be connected to, one IMS only (for example, the first IMS available after a bounce). This situation can be a concern in the case of critical systems (single point of failure) or, in the case of a subsystem such as DB2, the majority (80 - 90%) of the DB2 workload can end up on one IMS.

Initially, VGR had to be closed (with the IMS command /STO VGRS) prior to IMS shutdown, to allow faster logon for affected terminals to another IMS. IBM provided a fix that resolved this problem.

Early Thoughts About IMS V7

The final stage of the IMS product validation cycle takes the form of IMS Customer Introduction Programs. Prior to the General Availability (GA) of the new product, a small set of world-wide customers uses the product and its documentation in varied "real life" environments, with complex mission-critical applications and the complementary use of IMS tools. IMS conducts such programs to enable customers to provide as much early feedback as possible with their intensive evaluation of the new items and unchanged "base" functions. The resulting GA product incorporates the results of this customer experience and usage, and significant improvements are often implemented as a result of customer evaluation.

The introduction programs are managed and supported by the IMS group at Silicon Valley Laboratory in San Jose, by IBM PISC Hursley in the United Kingdom, and by the IMS service organizations in each participating country. Participants in the IMS V7 program included Barclays Bank in the United Kingdom; Deutsche Telekom Computer Service Management (DeTeCSM), GAD, Swest and RWG in Germany; Assicurazioni Generali in Italy, and Altaïr in France. Some of the North American customers included QWEST Communications, Toronto Dominion Bank, and Intria-HP/Canadian Imperial Bank of Commerce (CIBC). "Intria-HP was among the first in North America to put IMS V7 in production, for its largest customer CIBC," said Stan Singer, Vice President, Intria-HP.

Getting early experience is an objective for the programs, as well as for the program participants. For example, with IMS V7, the long sought-after HALDB (High Availability Large Database) support has become available. This major, innovative enhancement allows very large full function databases to grow beyond the previous limitations in size. It is also an attractive solution for medium and smaller-sized databases too, because the implementation of individual database partitions can improve their usability. Early customers with existing, large databases provided valuable feedback about the usability aspects, the performance characteristics, the functional completeness, and documentation for HALDB, as well as commenting on the importance of this item to them. Giampaolo Fiorese, Assicurazioni Generali, commented that "The major Insurance group in Italy was looking for a robust solution…Hence HALDB." And Karin Muth from DeTeCSM said, "We are looking forward to use the HALDB function, because we have to handle several databases with a size nearly or over 4GB. The HALDB function allows parallel processing and increases performance and availability." Kou Xuan-Son from Altaïr added: "Altaïr are nearing the 4GB limit on some databases, so early testing of HALDB was very important to us."

The stability of the new release is also extremely important to the IMS customer set. One of our early customers, Toronto Dominion Bank (TD IT VP, Margaret Harvey and Senior VP Jim Chamberlain), commented on the product stability. "The Toronto-Dominion Bank Financial Group continues to depend on IMS to provide the reliability, availability, and scalability the bank needs for its high volume 7/24, financial transaction systems. These systems service its traditional retail branch, ATM and POS debit network, in addition to the fast growing telephone, web and wireless banking businesses. Recently implemented, IMS V7 has shown good base code stability and we anticipate implementing the IMS V7 High Availability Large Database (HALDB) feature for a key full function database." Stephan Nostadt from DeTeCSM in Germany added: "We had no problems with the installation process and we were very satisfied with the base functions."

Just as important as product stability is ease of migration from one release to another. Early customers evaluated the migration to IMS V7 from both IMS V5 and IMS V6. In taking the new product from initial install to final validation, early customers commented on improvements in migrating from the prior version.

> **"… among the first … to put IMS V7 in production."**
> **Stan Singer, Intria/HP (CIBC)**
>
> **"… The major Insurance Group in Italy was looking for (a) robust solution… Hence, HALDB."**
> **Giampaolo Fiorese, Assicurazioni Generali**
>
> **"… IMS provide(s) reliability, availability, and scalability…"**
> **Margaret Harvey, Jim Chamberlain, TD Bank**
>
> **"… the migration was achieved non-disruptively."**
> **Jürgen Berghaus, GAD**
>
> **"… we have to handle databases… over 4 GBytes."**
> **Karin Muth, Deutsche Telekom**
>
> **"… early testing of HALDB was very important to us."**
> **Kou Xuan-Son, Altaïr**

For example, one of the availability enhancements in IMS V7 is the ability to upgrade the IMS V6 RECONs while IMS V7 remains active. Jürgen Berghaus, GAD, Germany, commented: "We are proud that the migration was achieved non-disruptively during our prime shift. IMS Version 7 is the first version to have made this possible!"

IMS values its close working relationships and partnerships with those customers who participate in our Introduction Programs. If you are interested in further information about participating and joining this group of dedicated customers, contact IMS Customer Introduction Programs at: imsmkt@us.ibm.com.

Rose Levin
IMS Quality Partnership Program
IBM Silicon Valley Laboratory

Alison Coughtrie
Product Introduction Solutions Consultancy (PISC)
IBM Hursley Laboratory, United Kingdom

Introducing IMS Connect,
the Bridge Between the Internet and IMS

IMS Connect is an exciting new database application management tool that provides e-business access to IMS applications. Enabling communications between TCP/IP and IMS via IMS OTMA (Open Transaction Manager Access), IMS Connect allows connectivity to IMS TM and IMS data from a TCP/IP client application. With IMS Connect, accessing IMS transactions and data in an e-business environment has never been faster or easier!

Using TCP/IP for communications with clients, and XCF (the MVS Extended Coupling Facility) for communicating with IMS OTMA, IMS Connect communicates with IMS V5, IMS V6, and IMS V7. Figure 1 demonstrates how IMS Connect communicates with IMS.
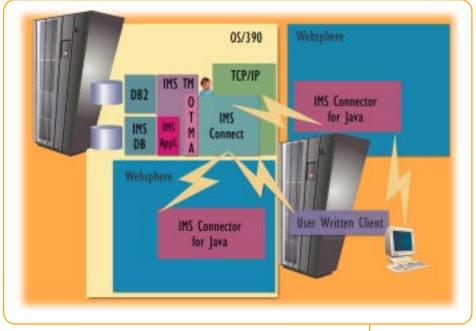

Figure 1: IMS Connect Communications

IMS Connect's flexibility enables communication with one or more IMS systems. Client and IMS workloads can be balanced with a single IMS Connect connected to one or more IMS systems — or one or more IMS Connects can be connected to a single IMS system. IMS Connect also allows you to manage and display the TCP/IP clients and IMS datastores.

IMS Connect replaces IBM's IMS TCP/IP OTMA Connection (IMS TOC) product. IMS TOC users can easily migrate to IMS Connect — very few, if any, changes might be required to existing client code or user-written message exits. Any required changes will support the new and enhanced functions that are available in IMS Connect.

Benefits

IMS Connect offers a rich assortment of benefits, including:

- Access to existing and new IMS transactions and databases via intranet or the Internet.
- Rapid deployment of IMS transactions in the e-business environment — without IMS transaction modification.
- Reduction of workstation development effort when used with IMS Connector for Java.
- TCP/IP client application development.
- Enhanced manageability over IMS TOC with SMP/E support.

Component Overview

IMS Connect provides three user message exits: HWSSMPL0, HWSIMSO0, and HWSJAVA0. These user message exits have the following subroutines:

- INIT, for initialization
- EXER, for read errors
- READ, for read completion from the client
- XMIT, for transmission to the client

HWSSMPL0 and HWSJAVA can be used as shipped, or can be customized to perform installation-specific functions. IMS Connect can also accommodate any user message exits that provide functionality similar to the INIT, EXER, READ, and XMIT subroutines.

An initialization/termination exit, HWSUINIT, allows the user to perform various initialization and termination processes. For example, when IMS Connect initiaizes, the user can load user tables or obtain storage for the user message exits. When IMS Connect terminates, the user can print data stored in the user tables, or capture data in the user-obtained storage.

IMS Connect uses the system services provided by the IMS Connect Base Primitive Environment (IMS Connect BPE). IMS Connect BPE offers its own set of commands for resource management. Additionally, IMS Connect provides 12 commands that display and manage IMS Connect resources.

Functional Overview

IMS Connect supports both *conversational* and *non-conver-sational* transactions. Conversational transactions are multiple exchanges between a client and the IMS Host application. Non-conversational transactions are a single exchange of one input message to IMS and one output message from IMS. IMS Connect supports conversational transactions in Commit Mode 1 (send/commit) only.

IMS Connect supports several *socket types*. Socket types enable you to select and control socket connects and disconnects on transaction boundaries. Transaction sockets allow a single conversational or non-conversational transaction to execute within a single connect and disconnect. Persistent sockets enable one or more conversational or non-conversational transactions to execute within a single connect and disconnect.

IMS Connect enables you to select the *commit mode* of the IMS Host application. Using *Commit Mode 0 - Commit then Send*, IMS database changes are committed prior to sending the message to the client. If the output message cannot be delivered to the client for whatever reason, the message is held in IMS. This message is treated as an Asynchronous output message, and the synch (synchronization) level must be set to Confirm. Using *Commit Mode 1 - Send then Commit*, the IMS database changes are not committed until the output message is sent to the client. The synch level can be Confirm or None.

IMS Connect supports two *synch levels*. The synch level enables the user to determine if the client application acknowledges the receipt of messages received from IMS Connect. The synch level used controls the IMS application termination sequence. *Confirm* requires the client to send an ACK (positive acknowledgment) or NAK (negative acknowl-edgment). Messages are queued, and database changes are kept or discarded depending on the whether an ACK or NAK is sent on the receipt of a message from the IMS Host application. A synch level of *None* means that messages do not need to be acknowledged. The Host application data-base changes are made and the output message is re-moved from the IMS message queue.

IMS Connect supports *Asynchronous output* (also referred to as unsolicited output) messages from IMS. The Asynchro-nous output support in IMS Connect allows the user to choose a message retrieval option, customize output notifi-cation, and set message retrieval options. IMS Connect supports the following three types of Asynchronous output messages:

- IMS application ISRT to ALT-PCB
- Commit Mode 0 output messages that have been NAK'd by the client
- Commit Mode 0 output messages that have been NAK'd by IMS Connect due to a delivery failure or to a lost TCP/IP connection

Security is supported in IMS Connect by the RACF (or equivalent) product. To enable security, you either create a security routine call with a user message exit, or configure IMS Connect to perform security calls.

Access your IMS data and transactions quickly and easily in an e-business environment using the powerful, reliable features of IMS Connect! For more information on IMS Connect, including a fact sheet and reference guide, please visit the Database Application Management Tools section of the Database Tools for OS/390 website at: http://www.ibm.com/software/data/db2imstools/.

Gerry Hughes
IMS Senior Developer

Sherry R. Gordon
User Technology Team Lead, IMS Connect
Executive Editor, IMS Newsletter

IMS OTMA: New and Improved

IMS Open Transaction Manager Access (OTMA), which was introduced in IMS V5, is an interface for host-based communication programs accessing IMS TM applications through the MVS Cross-System Coupling Facility (XCF). Transactions or commands can be sent directly from the communicating programs to IMS — without VTAM or TCP/IP. OTMA is being continuously enhanced to add new functionality. Here are a few of the many new OTMA enhancements.

New OTMA Features Introduced in IMS V7

Shared Queue Enablement for Commit-then-send (CM0) Messages

This function enables the OTMA Commit-then-send (CM0) messages to run on any IMS system in the shared queues group. Additionally, a program-to-program switch can run on any IMS system in the shared queues group, if the application initiating the program-to-program switch receives Commit-then-send input.

OTMA Commit-then-send output inserted to the IOPCB is routed back through the original IMS. OTMA Commit-then-send output inserted to an ALTPCB is delivered by the processing IMS.

Special Message Hold Queue for a Disconnected OTMA Client

A special message tpipe (transaction pipe) hold queue was created to save the OTMA Commit-then-send output that cannot be delivered because of a disconnected OTMA client. Once the client is reconnected to IMS, messages in the special queue can be sent to the client if the client requests them. Using the optional special tpipe hold queue, an OTMA client program can separate a regular one-in-one-out response with any unexpected responses for Commit-then-send (CM0) messages. The special message tpipe hold queue will also hold the ALTPCB output.

Without using the special queue, the OTMA client program must sort all the different commit-then-send responses, including the regular response, the response from the previous connection session, and the ALTPCB response.

If a OTMA client program decides to have a special message hold queue for each tpipe, the client program must specify that it needs the special queue during the OTMA client-bid time.

OTMA Enhancements
OTMA Security Initialization Parameter

A new IMS initialization parameter, OTMASE, has been created that enables you to easily control the OTMA security level (full, check, profile, or none). You can use this parameter in IMS control region JCL or in the IMS PROCLIB member DFSPBxxx. When you specify the OTMASE parameter, you do not need to issue a /SEC OTMA command to set or change the OTMA security during IMS cold start or warm start. See IMS V6 APAR PQ30626 and IMS V7 APAR PQ31971 for more information about the OTMASE parameter.

New Functions for OTMA PRX and DRU exits

In the OTMA pre-routing exit DFSYPRX0, the default OTMA client name for an OTMA message is always the input OTMA client that sends in the OTMA messages. The only way to get to the DRU0 exit for a different OTMA client is to allow the DRU0 exit of the OTMA input client to gain control first, then call the DRU0 exit of the different OTMA client to process the message.

A new IMS initialization parameter, OTMAMD, enables the OTMA pre-routing exit DFSYPRX0 to specify an OTMA client name for an OTMA message. By setting OTMAMD=Y and specifying a different OTMA client in the PRX0 exit, the DRU0 exit for the OTMA client that you specify will gain direct control. You can use the OTMAMD parameter in IMS control region JCL or in the IMS PROCLIB member DFSPBxxx.

The OTMA destination resolution exit, DFSYDRU0, determines the OTMA output destination. If an OTMA client is the final destination, the DRU0 exit can now override the output tpipe name for the OTMA output message. The overridden tpipe name needs to be specified in the output parameter list of the DRU0 exit.

A second new IMS initialization parameter, OTMASP, enables a synchronized tpipe to be created, if needed, during the OTMA destination determination phase. With the new OTMASP parameter, there is no need to code the DRU0 exit to set the default tpipe to synchronized. You can use the OTMASP parameter in IMS control region JCL or in the IMS PROCLIB member DFSPBxxx.

See IMS V6 APAR PQ32402 and IMS V7 APAR PQ33996 for more information about the new functions for the OTMA PRX and DRU0 exits.

New for OTMA C/I: Asynchronous Support

OTMA C/I (Callable Interface) is a set of APIs (Application Programming Interfaces) for OS/390 applications that enable callers to send transactions or commands to IMS — without having to know the XCF and OTMA interfaces. New API calls were introduced in IMS V6 APAR PQ32398 and IMS V7 APAR PQ36645, which enable callers to receive asynchronous messages from IMS or to issue a send-only message to IMS. Table 1 lists all of the OTMA C/I APIs that are now available.

New API (Y/N)	API Name	Function
N	otma_create	To create the data structures needed by OTMA C/I
N	otma_open	To establish the connection with IMS
Y	otma_openx	Same as for otma_open, with the ability to specify the DRU0 exit name
N	otma_alloc	To allocate a session for otma_send_receive
N	otma_send_receive	To send a transaction or command to IMS and receive a reply
Y	otma_send_receivex	Same as otma_send_receive with the ability to specify OTMA user data
N	otma_free	To free a session for the previous otma_send_receive or otma_send_receivex call
Y	otma_send_async	To issue a send only request
Y	otma_receive_async	To receive an asynchronous or unsolicited message from IMS
N	otma_close	To close the connection with IMS

Table 1: OTMA C/I APIs

Future Enhancements

IMS OTMA development would like to add these enhancements:

- Support for the shared queue for Send-then-commit (CM1) messages, to facilitate the distribution of IMS workloads in a shared queues group.
- Improved OTMA storage management.
- /EXIT command support for OTMA.

For more information about OTMA C/I, visit the OTMA website at: http://www.ibm.com/software/data/ims/otmaci.html.

Jack Yuan
Senior IMS Developer

Introducing IBM User Technology

In this article, Lori Fisher, manager of Data Management User Technology at the IBM Silicon Valley Laboratory, explains what User Technology is, and what it does. Lori joined IBM 18 years ago as an Information Developer. Today, as manager of the Data Management User Technology organization, Lori provides direction to eight departments, including information developers, graphic designers, programmers, globalization experts, and human factors engineers. Data Management User Technology is responsible for designing the interfaces and information for IBM's data management products such as IMS, DB2, and Business Intelligence Solutions, as well as other database utilities and tools. Dorothy Lin has recently joined the User Technology team for IMS.

Dorothy Lin: What is User Technology?
Lori Fisher: The mission of User Technology at the Silicon Valley Laboratory in San Jose is to design and develop those aspects of IBM data management products that users can see or touch.

It's really about designing the user experience. We're centered on the user and all aspects of usability and ease of use. We're dealing with the externals that affect the users, such as the interface, the product information, and also, the globalization of those externals for other languages and cultures. Some of the skills that make up User Technology include human factors, UI design, visual design, and globalization experts.

Dorothy Lin: What does the User Technology group do?
Lori Fisher: Across the company, User Technology groups are responsible for user interface design, leading the User Centered Design process, designing and developing all the information components of products, and doing the visual design of the whole visual signature, meaning everything from the packaging, CD-ROM labels, to icons and screen layouts. User Technology is also responsible for localization and globalization. IBM has a corporate director of User Technology who has corporate responsibility for all of those aspects, and each of us at different IBM locations then take direction from that executive.

Lori Fisher, IBM Data Management User Technology

Dorothy Lin: What is User Centered Design?
Lori Fisher: User Centered Design means that from the very beginning you involve the user to help make some of the decisions in the product development, as well as influence what some of the new technology products will be. We are part of the development team. We are considered development. We are there from the very beginning and have helped influence the design and delivery of the product.

Dorothy Lin: What are the immediate and long-term goals of User Technology?
Lori Fisher: Let's start with the long term goals first, or the strategic goal, if you will. The strategic goal is to help customers use our products as easily as possible with as little training as possible. We want to make the user experience a positive one. That's our big goal. Now short-term what does that mean? It means looking for ways to design interfaces that make tasks easier for our users. It means things like building information into the interface, including wizards, and things like pop-ups and hover help so that while users are performing tasks they can get all the information they need. It means things like using different interface models, so as the Web becomes more common, providing product interfaces with more of a Web look and feel will make more sense to the user and be easier to use.

Dorothy Lin: What developments do you see in the user assistance area?

Lori Fisher: One of the biggest developments has been the Web, which has caused some ripple changes in everything. For example, as we just mentioned in product interfaces but certainly for the information aspect as well. HTML help has come along and that has been popular in a number of products, not just from IBM. One of the problems with that output is that much of HTML help you see isn't field sensitive and it's not really linked to the product. It's in its own separate window. So I think finding better ways to make that help interactive and to make the link to the product and to the user task is important. The concept of "user assistance" — instead of online Help — means trying to anticipate the user's needs as opposed to responding or reacting to them. In many ways, Help is a reaction. Help says I've already made an error, now help me. User assistance refers to being proactive about it so that before the users ever make a mistake, we have already given them the information that they need to avoid that mistake.

Dorothy Lin: What contribution(s) does User Technology bring to IBM's products? How does User Technology influence the products that IBM produces and ultimately how does User Technology affect the end-user?

Lori Fisher: I would say the contributions range from small things like reorganizing a chapter of a book based on a user comment or feedback, to larger scale things like the fact that this organization last year had 28 patents for information and interface related deliverables. We conducted 3000 hours of user testing, which is a lot of hours of user testing! That kind of user feedback then results in actually changing some line items in the product, which ultimately affects the end user and the ease of use. That's been true of IMS where, based on user feedback from activities we conducted, we go back to product architects and say let's rethink this particular line item, maybe we ought to have a different design. As a whole, User Technology actually influences the design of the product. It's not just at the end of cycle writing about it. As User Technology we want to be the customer advocate within IBM and try to represent the needs of the user. Another way to think about it is, if we could avoid writing a whole book or a set of panels by instead redesigning a particular function so that it was easier to use and wouldn't need documentation, that's the choice we would like to make. We're not here to just write as much information as we can, we're here to make a product easier.

The User Technology team for IMS has done some very significant work in the last couple of years. Most recently they have started the process for an IMS information center. The IMS team has taken a lead in helping other User Technology groups design and think about how to build information centers for customers.

Dorothy Lin
IMS User Technology

IMS Services From IGS Integrated Technology Services

IBM Global Services (IGS) continues to be the world's largest information technology services provider. The IMS National Practice team within IGS Integrated Services Technology includes IMS specialists that each have over 20 years hands-on experience as both customers and IBM employees in all aspects of IMS support. Our fee-based services are customized to provide you with whatever combination of IMS planning, installation, maintenance, migration, performance, new feature/function enablement, and/or systems and database support you require.

Installation, Migration, and Maintenance Services

Because IMS V5 support discontinues on September 30, 2001 (and the Local DLI PRPQ support discontinues on June 30, 2001), our most frequently requested service continues to be a combination of planning, installation, and migration. This service includes identifying compatibility maintenance for your current IMS system, and reviewing and retrofitting your IMS exits and USERMODs. Our version-to-version migration services include installation of either IMS V6 or IMS V7, optionally combined with installation or upgrade of your IMS Tools, and migration into your specified IMS system(s). This service is tailored to provide you with the exact combination of planning, installation, hands-on training of your staff, and migration that you need to meet your business requirements.

Maintenance upgrade services that bring your existing system up to a current service level are also available. These types of services are typically requested by IMS V6 customers who upgraded their systems prior to their Y2K freeze, and are now addressing a need for a more recent maintenance level. Maintenance upgrade services are also popular with customers who are upgrading their IMS systems in preparation for, or as part of, an overall OS/390 system upgrade.

Both maintenance and migration services can be tailored to meet your needs, and can be scheduled as a contiguous project or in phases to allow for staged migration into multiple IMS environments. Services can be contracted well in advance to allow you to plan your projects for the entire 2001 year.

IMS Tools Services

The IGS IMS National Practice team offers several different IMS Tools services. The most frequently requested service is an upgrade of existing IMS Tools or installation of follow-on product tools as part of an IMS migration or maintenance service. Another service provides installation, proof-of-concept, and/or benchmarking to assist you in evaluating alternative IMS Tools products. Migration services to assist you in converting your software and jobs to alternate IMS Tools products are an additional service which can be contracted separately or combined with another service.

Performance and Tuning Services

Performance and tuning services to address a performance problem, or to simply review your IMS systems with an eye towards overall performance improvements, are also available. In either case, we will analyze your IMS system and make recommendations to resolve your problem and/or improve the overall performance of your IMS environment. Performance and tuning services can be contracted for IMS DB/DC and DBCTL systems. Performance and tuning for your IMS batch jobs and IMS Tools are also available, and can be contracted separately or combined with an IMS performance and tuning service.

Extended Availability Services

IMS e-business means your IMS system needs to be available more than ever. Our IMS extended availability service examines your entire operational environment and recommends steps to improve your IMS system and database availability. This service includes a performance and tuning analysis for your IMS systems, BMPs, batch jobs, IMS tools/utilities, and operational analysis of your IMS procedures and processes. Tactical and strategic recommendations are provided to help you achieve your extended availability goals.

IMS Staff Coverage Services

Is your IMS staff on vacation, extended leave, or temporarily assigned to a special project? Have our experienced IMS personnel step in to help you! IGS IMS National Practice can help you to accomplish those special projects and still provide day-to-day IMS coverage. Coverage services are frequently requested to provide a blend of several of our services to give you the maintenance, tuning, and/or day-to-day activities such as sysgens, operational support, and database support that you need to reduce a backlog of tasks that are not individually large enough to require a single concentrated specialty service.

For information on IGS IMS National Practice services, contact Winston Tobias at (216) 664-7271 or e-mail an information request to: wtobias@us.ibm.com.

Barbara Frost
IMS and IMS Tools Specialist, IBM Global Services

The Latest IMS Redbooks

IMS Version 7 and Java Application Programming (SG24-6123)

This book is designed for IMS users who want to develop IMS Java applications. It provides a hands-on look at programming online transactions in Java™, a new feature of IMS V7. The book is aimed at application programmers and system programmers to help them determine what changes are needed to the IMS environment for Java application execution. The reader is guided through the steps needed to develop an IMS Java application. This book describes how to use VisualAge for Java for application development and transaction execution.

Estimated to be available in December, 2000.

Current IMS-related Redbooks

Here are the most current IMS-related redbooks.

Title	Order Number	Publication/ Update Date
IMS/ESA Version 6 Guide	SG24-2228-01	March 1999
IMS/ESA Version 6 Shared Queues	SG24-5088	July 1998
IMS/ESA Shared Queues: A Planning Guide	SG24-5257	December 1998
Interoperability Between VSE DL/I and OS/390 IMS DBTCL	SG24-5249	December 1998
IMS Security Guide	SG24-5363	July 1999
IMS/ESA Database Tools Volume I: Database Manager Tools	SG24-5166	November 1999
IMS/ESA Database Tools Volume II: System Extension and Other Tools	SG24-5242	November 1999
Using VTAM Generic Resources with IMS	SG24-5487	November 1999
IMS Primer	SG24-5352	January 2000
IMS Version 7 High Availability Large Database (HALDB) Guide	SG24-5751	August 2000
IMS Version 7 Release Guide	SG24-5753	October 2000
A DBA's View of IMS Online Recovery Service (IMS ORS)	SG24-5751	Estimated, 4Q 2000

For more information about redbooks, or to download any redbook, visit the IBM Redbooks Web site at: http://www.redbooks.ibm.com.

Bill Arkins
ITSO IMS Specialist

What's New in IBM Database Tools for IMS?

Manage your IMS message queues with less effort, using the IBM Queue Control Facility (QCF) for IMS. IBM QCF for IMS is an IMS queue management tool. It manipulates the local, live IMS message queues in both the shared and nonshared queue environments. IBM QCF for IMS replaces the IMS Message Requeuer product, and provides both new and enhanced functionality.

What IBM QCF Does

IBM QCF for IMS reinserts (requeues) unprocessed messages, which would otherwise be lost, into the IMS message queues following an IMS cold start. IBM QCF for IMS can also reinsert previously processed messages for reprocessing. A queue overflow protection function monitors queue usage and takes action to prevent queue utilization from reaching critical thresholds.

The primary purpose of a message requeuer is to put messages back on the message queue for processing. There are two circumstances in which messages need to be requeued:

- When a system redefinition or failure requires a cold start and messages are lost from the IMS message queue without being processed.
- When messages are processed incorrectly because of an application program error.

Under either circumstance, messages must be returned to the IMS message queue if they are to be processed or reprocessed correctly.

In the non-Shared Queues environment, IBM QCF for IMS gets messages that need to be requeued from the system log data sets (SLDS). In the Shared Queues environment, IBM QCF for IMS gets messages from the cold shared queue, which is a special queue for messages that were in process when IMS abended. In either environment, messages get selected based on criteria that you specify in control statements. IBM QCF for IMS prints reports to indicate what it has accomplished.

Additionally, there is support for management of Queue Space Notification (QSN). The customer provides threshold information, which is then used to control the queue space utilization. Rather than allow a user (for example, a program or APPC terminal) to overflow the queue and take the system down, the QSN functions can do any of the following:

- Wait a program.
- Return a status code to a program indicating that the program will be terminated if it tries to insert again into the queue.
- Terminate a program.
- Provide the ability to release a waited program.
- Terminate a waited program.

IBM QCF for IMS supports all types of messages (except IMS Fast Path). Conversational messages get requeued; however, the conversation is not restarted, which allows the conversational transaction to proceed for an additional iteration.

IBM QCF for IMS can be used to reinsert messages in the IMS V5, IMS V6, and IMS V7 environments. When used in the IMS V6 and IMS V7 Shared Queues environment, IBM QCF for IMS has additional functionality.

Features and Benefits

IBM QCF for IMS has an ISPF front end that lets you select QCF functions and selection criteria to browse, load, query (messages or IMS status), recover, or unload messages from the IMS message queues. Specifically, the IPSF panels enable you to:

- View the status of the IMS system.
- View the status of the queue.
- View specific queue entries or list of entries.
- Unload specific queue entries.
- Delete specific queue entries.

IBM QCF for IMS can be used to do the following:

- Clean up the message queues. The cleaning process involves looking at the queues and, when appropriate, removing messages that are no longer needed.
- Perform regression testing, stress testing, and application program testing when test data is needed to simulate production loads or application program input.
- Port messages to a new IMS release (migration) or an old IMS release (fallback). Messages can be ported to other IMS systems for testing, offloading, or recovery reasons.

The IBM Queue Control Facility for IMS can be ordered from your IBM marketing representative, an IBM Business Partner, or by telephone at 1-800-IBM CALL. The product number is 5697-E99. For more details about the IBM Queue Control Facility for IMS, visit the Database Tools for OS/390 Web site at: http://www.ibm.com/software/data/db2imstools.

Elmer Rohde
IMS Database Tools Marketing Specialist

The Latest in IMS Education

Spotlight on IMS and e-business Training

Do you need to understand and perform the steps involved in creating an application that can provide Web connectivity to multiplatform DB2 data (Windows NT, AIX, OS/390 platforms) and IMS OS/390 data?   Need an industrial strength solution for access to existing and new IMS applications and data? Then consider taking an exciting new 3-day workshop — the IMS Data Access Workshop for e-business (CM750).

Some examples of the seven hands-on exercises you will execute in this class include:

• Creating a visual servlet with Visual Age for Java (VAJava) that:
  - uses a Data Access bean to access DB2 OS/390 account data
  - uses a Procedure Call bean to access a DB2 COBOL Stored Procedure to access customer data from an IMS OS/390 database using ODBA (Open Database Access)
• Creating a visual servlet with Enterprise Access Builder Tools of VAJava to:
  - access IMS OS/390 customer data by executing an existing IMS transaction
  - use a Data Access bean to access DB2 OS/390 account data

Updated IMS Courses

The following two recently announced courses have been replaced by updated offerings in the IMS curriculum:

• CM431 IMS Security, 3 days (replaces CM430)
• CM701 IMS V7 Product Enhancements, 3 days (replaces CM700)

For the most up-to-date information about IMS education, check our IMS curriculum spotlight at http://www.ibm.com/services/learning/spotlight/ims.html.

Amiet Goldman
Senior Direct Marketing Strategist

Last Word

Implementing VGR has been a great benefit to Absa insofar as providing more continuous service. While there is still a need to bounce IMS for maintenance, there is now no need to have a break in online availability. This improvment is most noticeable as, in a recent case, where an outage of one of the LPARs resulted in the IMS on that LPAR being unavailable in the middle of the online day. 99% of the online workload was transferred to the other IMS system within minutes.

Several years ago the Absa Production system was changed to a sysplex — not only for reasons of capacity constraint, but also in preparation for higher availability. VGR has enabled Absa to better exploit the advantages of having a parallel sysplex and, in doing so, to give a giant leap towards true 24-by-7 availability. If you would like to read further information about the banking, financial services and Internet banking in Absa, please see the our website at: http://www.absa.co.za.

Johan Cronje
Absa Consultant for IMS

IMS Technical Conferences in 2001

Get a jump start on planning for your 2001 IMS training needs! IMS has two technical conferences scheduled in 2001: one in Europe, and one in the USA.

March 5-9, 2001
Hamburg, Germany

October 22-25, 2001
Miami, Florida, USA

Find out about the latest and greatest enhancements with IMS V7, examine critical IMS TM and DB issues, and learn more about Business Intelligence. You will learn how to build e-business applications, exploit the IMS Connect facility for IMS TCP/IP support, and see how to use the IMS Connector for Java.

You'll also have the opportunity to explore what's new and exciting in the industry. Learn about RNR (Rapid Network Reconnect), the new IMS Transaction Management enhancement, and the IMS ORS (Online Recovery Service) facility that provides improved database recovery processing.

In 3 ½ days, you'll get to explore the full range of IMS technologies through informative elective sessions, one-on-one interactions with product developers, demonstrations of new technologies at the Product EXPO, networking opportunities at every turn, plus special social events.

For more information about the IMS Technical Conferences, or to enroll, visit the IMS Technical Conference Web site at: http://www.ibm.com/training/conf or call (800) IBM-TEACH (426-8322). If you are calling from outside North America, please use our international number, 001.770.858.5902.

Patricia Weatherly
IBM Marketing Specialist

HOT Web Sites

IMS
http://www.ibm.com/ims
http://www.ibm.com/software/data/ims

IBM Database Tools for OS/390
http://www.ibm.com/software/data/db2imstools

S/390 Application Development Solution (ADS)
http://www.s390.ibm.com/ads

IBM Enterprise Storage Server (Shark ESS)
http://www.storage.ibm.com/hardsoft/products/ess/ess.htm
http://www.storage.ibm.com
http://www.ibm.com/support/techdocs

IMS Technical Conferences
http://www.ibm.com/training/conf

Enterprise Connection Conference Call Series
http://www.s390.ibm.com/events

Customer Success Stories
http://www.s390.ibm.com/customer/

IBM Learning Services
http://www.ibm.com/services/learning
http://www.ibm.com/services/learning/roadmaps/imsidx.html
http://www.ibm.com/services/learning/spotlight/ims.html

SHARE Proceedings
http://www.share.org

Web Sites Mentioned in this Issue

IMS Connector for Java
http://www.ibm.com/software/data/ims/jitoc.html

VisualAge for Java
http://www.ibm.com/software/ad/vajava/

WebSphere Application Server
http://www.ibm.com/software/webservers/ appserv/

WebSphere Studio
http://www.ibm.com/software/webservers/studio/index.html

IMS OTMA Callable Interface
http://www.ibm.com/software/data/ims/otmaci.htm

IBM Redbooks
http://www.redbooks.ibm.com

IBM Global Services
http://www.ibm.com/services/

Where Is She?

I have hidden one picture of my baby daughter in this issue of the *IMS Newsletter* and in the past three issues (Fall/Winter 1999, Spring 2000, Fall 2000).

We want to hear from you... the first customer to correctly identify the location of my daughter in this and the preceding three issues of the *IMS Newsletter* will win an IMS jacket!

Some of you may no longer have copies of the earlier issues, while others of you have them framed on your walls next to your diplomas. Fortunately, there are several ways to easily review all of the issues of the *IMS Newsletter*.

You can view the *IMS Newsletter* on the IMS Web page at: http://www.ibm.com/software/data/ims/.

Alternatively, you can order copies of any *IMS Newsletter* in the same way you order other IBM publications. The order numbers are:
- Spring 1999 (GC26-9655-00)
- Summer 1999 (GC26-9655-01)
- Fall/Winter 1999 (GC26-9655-02)
- Spring 2000 (GC26-9655-03)
- Fall 2000 (GC26-9655-04).

Please e-mail your entry to: imsmkt@us.ibm.com

Or write to:

Editor-In-Chief,
IMS Newsletter
DQY/A2
P.O. Box 49023
San Jose, CA 95161-9023

Glenn N. Galler
Editor-In-Chief

IMS Newsletter
IBM Corporation
DQY/A2
P.O. Box 49023
San Jose, CA 95161-9023

GC26-9655-05