QSP
Enabling e-Finance

IBM

QSP:
A Top ASP Relies on IBM e-Infrastructure Technology

An IDC e-business Case Study

THE SUBJECT

Founded in 1981 as a developer of financial management applications, QSP has moved aggressively into the application service provider (ASP) market space. Approximately 25 percent of QSP's blue-chip clients currently access the company's WebFinance suite of applications through the ASP model.

THE GOAL

With competition in the ASP market heating up, QSP recognized the need to reduce the cost of supporting new customers on its hosting platform by adopting a more scalable, flexible hosting architecture.

THE SOLUTION

QSP employs NUMA-Q 2000 servers as its core service delivery platform, as well as IBM's "Shark" Enterprise Storage Server for storage. On the software side, QSP uses Tivoli Web Management solutions for systems monitoring, and IBM WebSphere Application Server and IBM MQSeries for application development and integration. QSP's expanding European data center supports over 14,000 named users and 2,000 concurrent users of hosted applications while its NUMA-Q servers run approximately 90 databases and perform an average of 1.5 billion database operations per day.

WHY IBM

"I see the fantastic response we have received from IBM as a direct result of IBM's expertise in infrastructure environments. IBM is committed to our success."

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QSP's core suite of applications, known as WebFinance, have been designed to perform exceedingly well in a hosted environment. In addition to application performance, QSP places a high degree of emphasis on integrating its hosted applications with its customers' legacy applications, (such as ERP, payroll, HR and CRM) running on their in-house systems—resulting in a more valuable solution for its customers.

As the market for applications hosting has matured, the key competitive requirements for application service providers (ASPs) have become increasingly clear: providing bullet-proof performance and reliability, fast deployment, excellent support, and integration with existing applications. As one of Europe's leading ASPs, QSP has put into place a first-class hosting infrastructure built around IBM technology, with the IBM NUMA-Q platform at the core. QSP migrated to an all-IBM platform when it became clear that its previously heterogeneous environment kept its costs too high and slowed its speed to market. It selected the NUMA-Q platform because of its near-linear scalability, which allows QSP to grow its customer base rapidly while keeping its service delivery costs at a minimum. In addition to NUMA-Q, QSP has also deployed the "Shark" Enterprise Storage Server as its core storage technology, and relies heavily on IBM MQSeries, WebSphere Application Server and DB2 Universal Database for application integration and e-business application development.

QSP's choice of IBM as its platform provider has led to substantial business results, including an estimated 25 percent reduction in the cost of adding new customers that is directly attributable to the scalability of the NUMA-Q platform. QSP also sees the high reliability of IBM products as the foundation of its aggressive Service Level Agreements (SLAs), which set QSP apart from its competitors.

QSP at a Glance

▶ **e-business State**	External Integration
▶ **Core Functionality**	QSP's hosting infrastructure supports over 14,000 named users and 2,000 concurrent users of its WebFinance suite of applications as well as various custom-designed e-business applications. QSP's hosted applications, running at its data centers, are integrated with customers' legacy applications running at their facilities via standards-based middleware.
▶ **Software**	IBM WebSphere Application Server, IBM MQSeries, IBM DB2 Universal Database, Tivoli
▶ **Servers**	IBM NUMA-Q 2000 Model E410, IBM "Shark" Enterprise Storage Server
▶ **Key Benefits**	▶ QSP's deployment of NUMA-Q servers has enabled it to add customers at a 25%-lower cost than competing platforms. ▶ Enabled by NUMA-Q, QSP's aggressive SLAs are attractive to larger enterprise customers. ▶ NUMA-Q's failure free performance (100 percent hardware availability rate) has saved the company penalty fees and further strengthened its reputation as a top-notch ASP.

Situation Analysis

▶ Background

In the fiercely competitive market for application hosting services, QSP has emerged as one of Europe's leading application service providers (ASPs). The company, which maintains headquarters in the North East of England with offices throughout the United Kingdom, United States, Australia and New Zealand, was founded in 1981 as a developer of financial management applications. Its blue-chip client list includes such notables as United Airlines, British Airways, and the London Stock Exchange. QSP first embraced the ASP model in July 1998, when it began hosting applications for a number of its clients that had previously run QSP's applications on their own mainframe and UNIX systems. While the company continues to derive a substantial portion of its revenues from the licensing and maintenance of its WebFinance suite of applications, hosting services represent its fastest growing line of business. Of the $70 million in total revenue it is expected to generate in 2001, an estimated 15 percent will come from the ASP side of the business, up from 10 percent in 2000.

"The single most important reason we can deploy our hosted solution so rapidly is our delivery platform—which is very scalable and flexible. Given that other ASPs' hosted enterprise applications can take several months to deploy, our rapid deployment capability—and by extension our infrastructure—is a true point of differentiation."

— Mike Hudgell, UK Sales & Marketing Director, QSP

QSP targets its application hosting services to larger companies, with revenues in the $100 million to multi-billion dollar range. According to Mike Hudgell, UK Sales & Marketing Director, a big factor in QSP's success is its ability to bring an ASP customer online within a very short time frame. "The single most important reason we can deploy our hosted solution so rapidly is our delivery platform—which is very scalable and flexible," says Hudgell. "A good example is Arcordia [a division of JP Morgan], for whom we got a 300-user accounting solution up and running in 15 days. Given that other ASPs' hosted enterprise applications can take several months to deploy, our rapid deployment capability—and by extension our infrastructure—is a true point of differentiation."

▶ Needed: A Scalable Platform to Enable Cost-Effective Growth

When QSP began delivering its software solutions to customers through an ASP model in 1998, its hosting infrastructure was relatively heterogeneous, including hardware from Sun Microsystems, Hewlett-Packard and Sequent (which was subsequently acquired by IBM). By the end of 1999, with its application hosting business gaining momentum, QSP began a systematic re-evaluation of its hardware strategy—a process whose ultimate goal was to guide the company in aligning its service delivery platform with the emerging requirements of the ASP market.

Among the ASP market realities acknowledged by QSP, arguably the most important was a projection of rapid growth in overall service revenues. In support of this, IDC projects that in Western Europe, ASP service revenues will grow at a compounded annual rate of 128% from 2000 (estimated revenues of $93 million) to 2005 (projected revenues of $5.8 billion). To capitalize on this robust growth, QSP saw the need to move quickly to capture market opportunities—as well as the ability to efficiently integrate hosted solutions

with customers' legacy systems— as critical. But most fundamentally, QSP understood that for its ASP business to achieve sustainable profitability, it needed to minimize the cost of delivering services to new customers. As the single most important determinant of cost, QSP's service delivery infrastructure was seen as the linchpin of its success.

As Hudgell points out, QSP's review confirmed the need to streamline its hosting environment by moving to a single platform. "We discovered—like most companies—that our previous strategy of supporting multiple platforms is not only cost prohibitive, but also slows our speed to market," says Hudgell. "The first and most important goal of our new infrastructure approach was to identify a platform vendor that would give us the flexibility, scalability, and price performance we needed on our expected future growth path."

Action Plan and Decision Process

▶ First Steps

Having decided to adopt a single-vendor platform strategy, QSP's first task was to determine its overall system requirements, which would better enable the company to select the optimal hardware configuration. In selecting a hardware vendor, QSP articulated a number of specific criteria related to:

- *performance*—in terms of the ability to tune the system to deliver hosted applications;
- *scalability*—defined as the ability to cost-effectively and incrementally add infrastructure capacity;
- *reliability*—measured in terms of mean time between failures (MTBF);
- *openness of architecture*—a platform that could support a variety of platforms; and
- *system footprint*—measured in terms of "power per computer room floor tile."

▶ Selection Process

After evaluating offerings from Sun Microsystems, Hewlett-Packard and Compaq, QSP selected the IBM NUMA-Q platform. IBM NUMA-Q 2000 enterprise servers are typically employed in data center environments, running such demanding applications as electronic commerce, customer relationship management (CRM), and enterprise resource planning (ERP). The NUMA-Q server line employs a non-uniform memory access (NUMA) architecture, a type of parallel processing under which each processor has its own local memory but can also access memory from other processors' memory, yielding substantially faster memory access times.

"NUMA-Q's ability to incrementally scale up to 64 processors allows us to easily and cost effectively grow with our customer base."

— Colin Henderson, Manager of ASP Operations, QSP

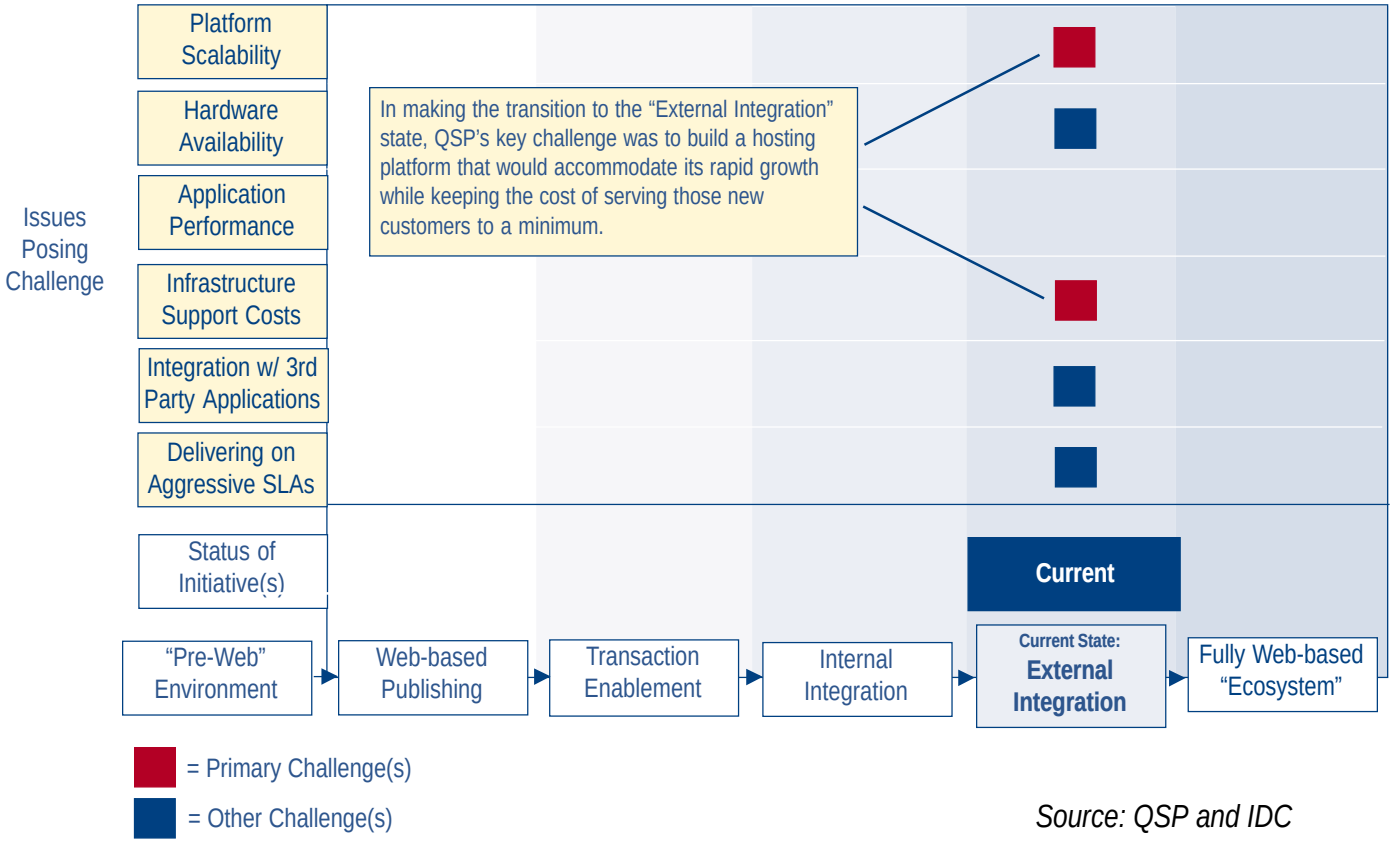
According to Colin Henderson, Manager of ASP Operations, NUMA-Q's "unbelievable" scalability is one of the many factors that drove QSP's selection process. "NUMA-Q's ability to incrementally scale up to 64 processors allows

us to easily and cost effectively grow with our customer base," says Henderson. "We estimate our cost of adding new customers is at least 25 percent lower than the nearest competitive platform."

Henderson points to NUMA-Q's superior reliability and availability as major factors behind its selection. Henderson specifically cites the importance of reliable hardware in enabling QSP to fulfill its service level agreements (SLAs) with its customers, a standard practice under which a provider pays penalties to customers if it fails to meet performance and availability metrics. "NUMA-Q's superior performance in our benchmark tests—yielding availability rates of 99.95% percent or better—strengthen our ability to deliver on our SLAs," notes Henderson. "In addition to the obvious benefit of QSP not paying fees [which can amount to tens of thousands of dollars per month per customer] for missing an SLA, it further burnishes our reputation as a partner our customers can count on."

Hudgell concurs on the value of maintaining trust in the ASP arena, citing a recent high-profile account win where trust played a major role. "One of our key customers—Powergen, the primary power company in the UK—recently expanded the range of applications they want us to host for them, on the strength of the reliability that we've provided them thus far," says Hudgell. "This is a testament to their trust in our ability to deliver—and to NUMA-Q's proven reliability."

Challenges at Various States of QSP's e-business Evolution



Source: QSP and IDC

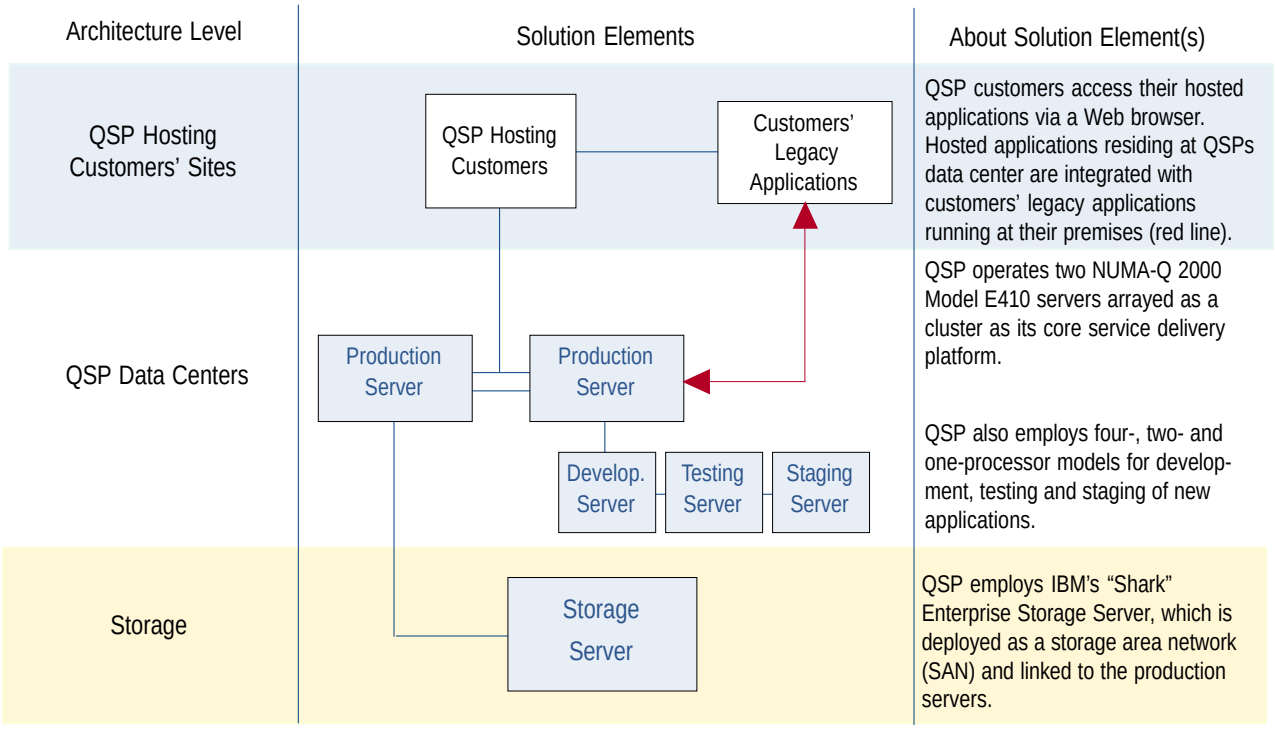
Solution Profile and Implementation Strategy

▶ QSP's Data Center Architecture

QSP operates data centers in Gateshead, UK (serving Europe); Raleigh, NC (North America); and Canberra, Australia (Asia Pacific). Within its European data center, QSP operates two NUMA-Q 2000 Model E410 servers as its core service delivery platform. Arrayed as a cluster, both servers are presently equipped with 16 processors, although each can support as many as 64 processors. In addition to these production servers, QSP also employs a series of smaller models (four-, two- and one-processor) for development, testing and staging of new applications, respectively. QSP purchased its first NUMA-Q system in February 1998.

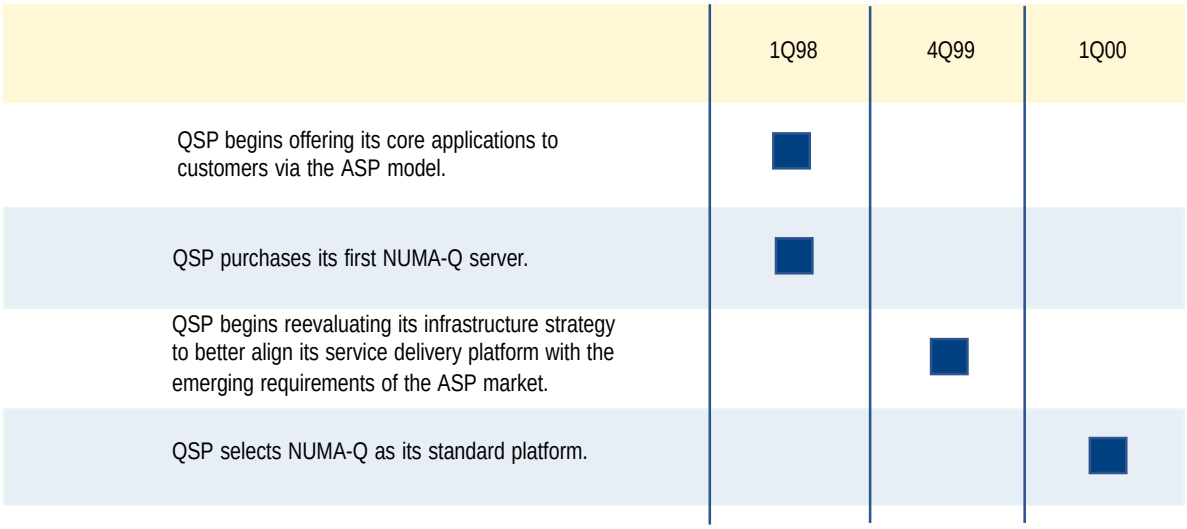
For backup, QSP employs IBM's "Shark" Enterprise Storage Server (ESS), a disk storage system built on the foundation of IBM's Seascape Storage Enterprise Architecture. One of its key strengths is its ability to work with heterogeneous hosts and operating systems as well as a variety of interfaces. QSP's ESS is deployed as a storage area network (SAN) linked to the production servers. Of its total capacity of 5.5 terabytes, the ESS contains two terabytes of production data. To monitor the performance of its hosted applications, QSP employs Tivoli Web Management solutions, which automatically notify QSP's systems management personnel of any application performance issue or problem. QSP also uses Tivoli modules to optimize its application performance. QSP's European data center supports over 14,000 named users and

QSP's Basic Data Center Architecture



Source: QSP, Inc. and IDC

Development Timetable for QSP's Infrastructure



Source: QSP and IDC

2,000 concurrent users of hosted applications. Additionally, its NUMA-Q servers run approximately 90 databases and perform an average of 1.5 billion database operations per day.

▶ IBM Software Critical for Integration and Application Development

"The advantage of using WebSphere over other framework products is that there is a single family of products that has been proven to work together. As an organization that gets heavily involved in system integration, that removes a huge headache for us. Choosing the WebSphere framework essentially 'de-risks' the project."

— Rob Walker, Managing Director of Inform Software Systems (QSP's e-business unit)

As an ASP that integrates externally with its customers, one of QSP's key requirements is the ability to link its hosted WebFinance solutions (which reside at the QSP data center) to its customers' existing third-party solutions (which reside at the customers' facilities). In one key example, one of QSP's largest customers—a highly diversified German manufacturer—integrated QSP's Sales Ledger application with its existing SAP Sales Order Processing (SOP) application, allowing invoices and credit notes (produced in SOP) to be fed to the hosted QSP application. In selecting a tool to facilitate the integration of disparate applications, QSP again looked for an industrial strength, reliable and standards-based product, notes Hudgell, and the search ended with IBM MQSeries. "We chose to employ MQSeries because it is by far the industry standard for providing interconnectivity between disparate applications," says Hudgell. "Its ability to provide guaranteed message delivery between disparate systems appeals to our demand for high levels of reliability."

In addition to integrating with existing applications, the ability to build new e-business applications has also proved critical to QSP's success in the ASP market. QSP addresses the e-business development opportunity through its Inform Software Systems subsidiary (www.informuk.com), which counts IBM WebSphere Application Server as its core technology product. In one key example, Inform used WebSphere Application Server and IBM DB2 Universal Database to develop a portal-oriented product used by employees. According

to Rob Walker, Managing Director of Inform, WebSphere provides the ideal framework for efficiently developing integrated e-business applications. "The advantage of using WebSphere over other framework products is that there is a single family of products that has been proven to work together," says Walker. "As an organization that gets heavily involved in system integration, that removes a huge headache for us. Choosing the WebSphere framework essentially 'de-risks' the project."

Business Results

QSP has achieved an impressive array of business results related to its selection of the NUMA-Q platform, all of which had a clear impact on its bottom line. Hudgell sees one of the most significant benefits of NUMA-Q as its ability to add capacity cost-effectively, thus avoiding a key strategic pitfall of the ASP industry. "The fundamental economic challenge for a start-up ASP is to make money given its large up-front investment requirement, and the fact that revenue is generated incrementally over the set contract timeframe," says Hudgell. "For QSP, the NUMA-Q platform played well to this because it allowed us to grow our environment in a cost-effective manner by simply adding processors as needed." QSP estimates that NUMA-Q's near-linear scalability allows it to add new customers at a 25 percent lower cost than that of less scalable competitors.

QSP has also achieved a range of benefits attributable to NUMA-Q's outstanding reliability and availability. In the area of SLAs, NUMA-Q's 100 percent hardware availability rate has provided QSP with the means to offer some of the industry's most aggressive provisions—thus improving its ability to meet

Overview of QSP's Business Results Achieved

Business Process Area	Nature of Benefit	Description or Metric
New Customer Service Provisioning	Cost Avoidance	QSP's deployment of NUMA-Q servers has enabled it to add customers at a 25%-lower cost than competing platforms.
Sales and Marketing	Robust Service Level Agreements	Enabled by NUMA-Q, QSP's aggressive SLAs are attractive to larger enterprise customers.
Service and Support	High System Reliability	NUMA-Q's failure-free performance (100 percent hardware availability rate) has saved the company penalty fees and further strengthened its reputation as a top-notch ASP.

Source: QSP and IDC

the stringent needs of larger enterprise customers. On the flip side, the fact that QSP has yet to experience a hardware failure with its NUMA-Q platform has both saved the company penalty fees and further strengthened its reputation as a top-notch ASP. "The fact that the failure rates of the NUMA-Q system are very, very low—they run unattended without any problems for thousands and thousands of hours—is obviously very good for us because we can rely on it," says Hudgell. "The fact that we serve as ASPs to 42 of the top 130 blue chip companies in the UK shows that we're meeting some fairly exacting requirements."

Case Epilogue

On top of the manifold business benefits it has derived from using IBM infrastructure technologies, QSP gives high praise for the support it received from IBM both before and after its purchase. QSP's Henderson underscores the importance of IBM's pre-support resources in making sure his company bought the right product to meet its highly specialized needs. "The key letter in ASP is the 'S' which stands for service," says Henderson. "It is absolutely critical that we have the right system configuration to ensure that our customers receive the best possible service performance. We worked very closely with IBM's pre-sales people to make sure that we got the right configuration."

"Unlike some vendors, which basically don't want to get involved after they sell the box, IBM is committed to our success."

— Colin Henderson

QSP has received similarly strong support from IBM for post-sales issues, including such areas as system upgrades and new revisions of firmware. As Henderson points out, the fact that IBM responded promptly in situations which could have led to a degradation in service to QSP's customers shows its deeply ingrained understanding of the service provider market. "I see the fantastic response we have received from IBM as an outgrowth of IBM's expertise in infrastructure environments," says Henderson. "Unlike other vendors, which basically don't want to get involved after they sell the box, IBM is committed to our success."

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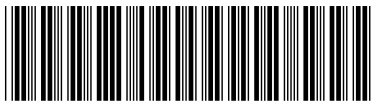

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