Sequent Corporate Profile
What's new

┤ Updated hardware and software summaries.

┤ New sections describing software subsystems and performance issues.

┤ New section on futures as they relate to product issues.

┤ New sales tactics relating to HP's strengths and Sequent's perceived strengths.

Corporate overview

Sequent, founded in 1983, develops and manufactures symmetric multiprocessing (SMP) computer systems for the commercial, open systems marketplace, with a focus on online transaction processing and relational database applications. Sequent has also developed parallel enabled versions of Oracle, NetWare, and AT&T's Streams.

During 1991, Sequent had three consecutive quarters of losses. Among various measures they took to return to profitability was to cut approximately 26 percent of the work force (excluding the sales force), assign quotas to the support staff, and consolidate various sales offices. Sequent also put more emphasis on direct end-user sales after a heavy reliance on two key OEM partners (Unisys and Siemens-Nixdorf) seriously affected their 1991 revenues. Their change of focus resulted in returning to profitability in the fourth quarter of 1991. For the first three quarters of 1992, Sequent has managed to turn in a small profit with steadily increasing revenue. For example, revenue in the third quarter stood at $81.9M with net income of $4.2M. Sequent attributes its turn-around to robust sales in Europe.

In fact, much of Sequents' success comes from its increasing emphasis on major accounts; Sequent with its "near" quasi-parallel SMP technology has attracted a group of elite customers who need high-end OLTP and NetWare servers. Additionally, Sequent's traditional tie with Oracle and new links with Novell and Microsoft has given corporate users the perception that Sequent is in the forefront of high-end database and PC servers market.

Key executives

Casey Powell
Chairman, President, and CEO
Sandy J. Chumbley
Vice President and General Manager of Core System Operations
J. Patrick Maley
Vice President and General Manager of North American Operations
Roger A. Cooper
Vice President and General Manager of European Operations
Alan Schallop
Vice President and General Manager of Relational Solutions Operations
Waldo J. Richards
Senior Vice President and COO

Financial highlights

SEQ01.HPG;4.565";3.356";HPGL

R&D costs of $25.8 million were the same as in 1990 but increased from $15.9 million in 1989.

Cost of sales as a percentage of total revenue was 54 percent compared to 41 percent in the previous two years.

SEQ03.HPG;4.565";3.356";HPGL

SEQ04.HPG;4.565";3.356";HPGL

SEQ05.HPG;4.565";3.356";HPGL

SEQ06.HPG;4.565";3.356";HPGL

Sales organization

During 1991, Sequent consolidated some of their sales offices in the U.S. and Canada due to their financial difficulties. Sequent now has 27 sales and service locations in the U.S., 2 in Canada (Toronto and Vancouver), 8 in Europe (Amsterdam, Great Britain, Dusseldorf, London, Munich, Nice, Paris, and Stockholm) and 3 in the Far East (Hong Kong, North Sydney, and Auckland).

Sequent also has relationships with a variety of distributors to provide sales and service in other countries. These include Control Data in Mexico, International Turnkey Systems in the Middle East, Far East Computer in Singapore, Mitac in Taiwan, and Ssang Yong in South Korea. In Japan, Sequent systems are sold through Pana-Sequent, a joint venture between Matsushita Electric Industrial Company Ltd. In addition, Sequent has relationships with value-added resellers for such markets as telecommunications, financial services, library automation, and the public sector.

Sequent had OEM partners that included Unisys Corp., Siemens-Nixdorf Informationssysteme AG, MAI-Basic Four, and Prime Computer. Prime terminated its OEM relationship with Sequent at the end of FY90, due to channel conflicts. There has been no revenue from MAI-Basic Four after first quarter 1991 and the Siemens relationship was temporarily terminated in November 1991. Of the original partners, Unisys is the only one that continues in its OEM relationship and, at this writing, the business relationship with Siemens-Nixdorf seems to have been renewed.

The financial difficulties during 1991 were primarily caused by a shortfall in OEM revenues. As a result, Sequent has decided not to invest any more effort in developing the OEM channel but rather to focus on direct and distributor revenues. They are now focused on increasing the size and effectiveness of their direct and distributor channels and are also focusing on international revenues. The direct sales force is 300 strong and the number of VARs is better than 44.

Target markets

- health care
- telecom
- state and local government
- financial services
- insurance
- accounting
- manufacturing

Representative sample of Sequent customers:

Federal, State, and Local Governments
- Central Statistics Office (U.K.)
- Internal Revenue Service
- Los Angeles County Sheriff's Department
- State of Oregon - Dept. of Environmental Quality
- City of San Antonio

Financial Services
- Liberty Life Assurance Co., Ltd.
- London Stock Exchange
- Lloyds Bank
- Merrill Lynch
- Royal Bank of Canada

Manufacturing
- Boeing Computer Services
- Ford Motor Company
- PPG Industries
- TRW, Inc.
- Union Carbide Canada Ltd.
- British Petroleum
- DuPont Co.

Medical
- Baylor Health Care System
- GTE Health Systems, Inc.
- Mercy Health Care - Sacramento
- Rush-Presbyterian - St. Luke's Medical Center
- San Diego Naval Hospital Research

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-       Argonne National Laboratory
-       Lawrence Livermore National Laboratory

Telecommunications
-       AT&T 911
-       Cincinnati Bell Information Systems Inc.
-       GEC/Plessey
-       NYNEX Enterprises

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Strategic goals

┤ Emphasize leading-edge technology as a differentiator - parallel processing in hardware as well as software; object technologies in high-end systems environments

┤ Build OLTP features into UNIX[a] systems

┤ Improve the direct and distribution channels

┤ Increase international revenues

┤ Pledge processor technology with Intel

┤ Provide PC network superserver with parallel version of Novell NetWare

┤ Provide the best solution for distributed processing between central office and branch operations

┤ Provide multivendor connectivity including SNA, 3270, and DECnet

┤ Leverage strong relationships with RDBMS vendors (for example, Oracle) into higher sales

Major claims

┤ First to deliver commercial SMP systems

┤ First to deliver parallel enabled databases and communications software

┤ First to develop object-oriented software for high-end OLTP server environments

┤ Standards-based open systems

┤ Leading price/performance

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⊣   Outstanding reliability

⊣   Cost-effective expandability

⊣   Primary partner of AT&T's UNIX Systems Laboratories (USL) to develop SMP version of UNIX System V

Symmetry 2000 systems
Customers
Commercial
Competition
HP, DEC, IBM, Pyramid, DG
Purchase rationale
Database server, OLTP performance, scalability
Base pricing
S2000/250
$ 53,500
S2000/450
152,000
S2000/750
226,000

Competitive positioning

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SEQ08.HPG;4.565";3.356";HPGL

Sequent has built its business on harnessing the power of a symmetric multiprocessing (SMP) architecture for business tasks. The architecture was designed to be independent of the processor being used; as such, Sequent was able to launch its business using National Semiconductor 32032 processors and switch to the industry-standard Intel 80386 processors while providing customers simple board-swap conversions to the new systems. Sequent's current systems are called the Symmetry series and use Intel 80486 processors. Various implementations of the 80486 processor (running at 25, 33, and 50 MHz) are used in the Symmetry systems.

Aside from high OLTP performance at competitive prices, Sequent has been able to deliver good product reliability and system uptime. Their emphasis on quality in design, manufacturing, and testing, complemented with high-availability functionality, has led to commercial users considering Sequent as a viable vendor.

Within the currently shipping Symmetry S2000 computers, the models 40, 200, 400, and 700 are based on the 80386 and the 25 MHz 80486 CPUs. The S2000 models 250, 450, and 750 use the 50 MHz 80486 CPU. The S2000/40 is a uniprocessor system, Models 200 and 250 use up to 6 processors, Models 400 and 450 use up to 10 CPUs and Models 700 and 750 use up to 30 processors. Note that a configuration with the same quantity of CPUs in any of these models would offer the same performance; the difference is in the connectivity, memory, and disk capacity.

At the high-end, although the system can accommodate up to 30 processors, the 26-processor configuration seems to be the peak of the performance curve. This is due in part to bandwidth limitations of the current system bus which runs at 80 MBs (compared to close to 1 GB on the HP Model 890). These limitations have already been compensated for, with larger processor cache sizes (1 MB for 486/50 MHz). Since 1 MB is the maximum amount of cache allowed for 486, Sequent will need to look at a faster system bus for future growth. A new bus will most likely be incompatible with existing system boards such as memory cards and disk controllers.

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Sequent also needs to evaluate a higher performance processor for use in their systems. In 1991, there was a research project under way to evaluate the use of RISC processors in the next generation of computer systems. This project was canceled due to weak financial results and the need to cut costs, including R&D expenses. In lieu of the RISC processor Sequent has decided, for now, to use the Intel P5 "due to its RISC-like capabilities".

There was a shift to invest more heavily in software in 1991 due to financial constraints. Recent news, however, showed Sequent has again put more emphasis on hardware to achieve a 50/50 balance.

Software summary

Sequent has staked its future on parallelized SMP computers. Recognizing that multiprocessing (MP) computer architectures are becoming increasingly commonplace, Sequent is focusing efforts on using parallelism in software.

In a joint effort with Novell Inc. they have developed a parallelized version of Novell's NetWare communication software. Note that the modified NetWare is not proprietary to Sequent and will be made available by Novell to other vendors such as HP, IBM, and DEC. Sequent is also partnering with AT&T's UNIX Systems Laboratories in enhancing UNIX System V to incorporate secure, fully symmetric MP support and has new communication software using an SMP-optimized "parallel" implementation of STREAMS.

Sequent also joined the wave of "clustering" which enables applications to view multiple-node systems as a single very large system using a single shared database. Availability is pegged for the first quarter of 1993. Not surprisingly, Oracle 7 will be the first database supported.

At present, Sequent's MP technology helps improve performance only in OLTP applications and does not address performance issues with heavy batch workloads. This is the result of weak performance of each individual processor that is used in the system. To compensate this

shortfall, Sequent has devoted resources to find new ways of using MP to improve performance with queries and batch jobs. One example is to work with Oracle, Informix, and Sybase to develop and to deliver a parallelized version of relational database. Providing built-in OLTP features into UNIX systems is also part of Sequent's strategy.

Sequent is developing its multivendor networking capabilities so customers can install Sequent systems in a heterogeneous environment. Recent introductions provide improved commercial functionality, specifically with regard to online and remote backup, disk mirroring, disk striping (allowing portions of multiple disks to be viewed as one logical entity), disk concatenation (multiple disks being viewed as one) and transaction monitors (Tuxedo).

Sequent has also cultivated relationships with a variety of third-party software vendors to offer more than 500 applications in accounting, office automation, financial services, travel and transportation, health care, manufacturing, and other areas.

Performance

Although Sequent can configure up to 30 processors in their systems it is common belief (among industry consultants) that the current Sequent bus and I/O architecture cannot support future high-performance Intel microprocessors due to bus saturation issues.

Sequent has published a few TPC-A results but only the most is worth noting. Sun published a TPC-A rating of 618.39 on its Model 750 with 26 main processors and 18 Compaq PC front-end processors. HP's current 890 platform is right in the same performance range with much more potential for future performance growth. Sequent's leadership in the high-end OLTP has essentially been eliminated once and for all.

See the Appendix for system comparisons with respect to TPC-A and TPC-B benchmark results.

Enterprise-wide connectivity

Sequent offers products that can provide connectivity to industry-standard conventions such as NFS, TCP/IP, OSI, and X.25. A suite of TCP/IP products provides connectivity to IEEE 802.3, X.25, and Berkeley networking facilities. The NFS product allows diskless Sun workstations to boot from a Sequent NFS server. The X.25 product is available with parallel STREAMS for high performance.

An LMserver product conforming to Microsoft LAN Manager Version 2.0 provides PC integration and interoperability with other vendors' implementations of LAN Manager. Ethernet/802.3, Token Ring/802.5, and FDDI provide additional connectivity.

Sequent also offers proprietary protocols such as NetWare, DECnet, LAT, SNA, and BiSync. IBM connectivity is delivered through products that provide SNA-based 3270, RJE, and LU6.2 functionality as well as Binary Synchronous protocols based on 3270 and RJE functionality.

Controllers are available to provide direct connectivity between Sequent and IBM systems.

HP offers comparable connectivity with industry-standard as well as proprietary protocols. Third-party solutions provide BiSync 3270 and RJE functionality. In addition, HP's OpenView network manager has been widely recognized as a leading product. Some of the licensees include IBM, Andersen Consulting, GM/EDS, and Synoptics.

System management

Sequent offers software products for backup, disk management, and transaction monitoring. Their ptx/Backup allows files and databases to be backed up even while users are at work. It can backup multiple machines concurrently, to one or several storage devices in a fully automated manner. It can also support machines from Sun, IBM (RS/6000), and MIPS on the network.

The ptx/SVM (Sequent Volume Manager) product optimizes disk I/O in several ways. It offers disk mirroring, making up to eight copies of data. It also offers disk concatenation, which allows two or more disks to be viewed as one. Another feature, disk striping, allows portions of multiple disks to be viewed as one logical entity, so that data on a heavily used partition can be split over several disks. This product also allows data to be moved among disks while the system is running.

Sequent's ptx/Transaction is a monitor based on Tuxedo from the UNIX Systems Laboratories. It manages all communications within an OLTP client/server environment. It also shortens the time required to develop complex applications and improves their quality.

Sequent provides a menu-based "easy-to-use" system administration package.

HP offers all of these functionalities and more through products such as OmniBack, disk mirroring, SwitchOver/UX, System Administration Manager (SAM), Logical Volume Manager, GlancePlus/UX, LaserRX/UX, RXForecast, Tuxedo, Encina, Top-End and OpenView Network Management Server. In addition, Computer Associates will make available on HP-UX, their UNICENTER product to provide centralized control and administration of the data center before anyone else.

These products are among the reasons for the superiority of HP-UX in

commercial environments when compared to other UNIX products.

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Software development

Sequent provides a single system architecture that allows binary compatibility across their entire systems family. A comprehensive set of library routines are provided that support parallel programming in all languages available on Sequent systems. A parallel debugger is also available to execute parallel programs in a controlled environment where all execution streams can be monitored.

Sequent provides development language support for C, C++, FORTRAN, Pascal, and MicroFocus COBOL/2. Third-party products are available for development in BASIC, Lisp, and Prolog. A third-party FORTRAN parallelizing preprocessor is also available. For commercial development, the Focus, Informix, Ingres, Oracle, Progress, Sybase, and Unify relational database management systems are also available.

HP offers the common development languages and tools listed above including the leading database products. Agreements with companies such as Computer Associates, Software AG, Cincom, IBI/Focus, Lawson Associates, SAP, and ASK help provide capabilities similar to a mainframe environment. In fact, partners that include Innovative Information Systems Inc. (IISI), InfoSoft, Integris, CGI Consulting, and Andersen Consulting, help HP provide customers assistance in reducing their dependence on expensive mainframe systems.

HP has close to 4000 end-user applications compared to about 500 from Sequent. All the major ISVs are delivering their products on HP, including the ISVs from the mainframe environment.

Service and support

Sequent offers support with their own staff as well as in partnerships with strategic multivendor service providers. Sequent provides coverage 24 hours per day, 7 days per week through some 200 of Sequent's and Unisys's offices across the U.S. and Canada. A variety of service agreements are offered that range from simple parts replacement, software support, software updates, or a complete set of system services.

Consulting services are available to provide technical expertise in

developing applications, databases, networks, or in migrations. Educational services provide instruction at Sequent facilities or at the customer's site. Custom Integration services provide special solutions that customers might require.

When it comes to overseas support, Sequent is strong in the UK; however, in most parts of Europe, the Far East and Latin America, they have minimal support capabilities, if any at all. In contrast, HP offers its industry-leading support regardless of geographic location.

High availability

Sequent does offer disk mirroring functionality with the ptx/SVM product as described earlier. Sequent's SMP technology also allows automatic processor failover. If one processor fails, the operating system software automatically reconfigures the system to run on the remaining processors. However, system switchover and fault-tolerant products are not available. HP has superior capabilities in this area. The range of high MTBF, disk mirroring, SPU failover, and fully fault-tolerant systems enables HP to offer solutions with higher degrees of high availability.

Although Sequent claims to put emphasis on quality in their manufacturing process, they do not publish any information on failure rates or mean time between failure of their systems. Note also that, uniprocessor systems are inherently more reliable than multiprocessor systems.

Disk array functionality

Sequent provides I/O controllers that are capable of providing functionality equivalent to HP's disk arrays. Each of these "Quad Controllers" can support four fast and wide 16-bit SCSI-2 I/O channels, each channel being capable of supporting 12 disk connections. This provides a disk capacity of up to 96 GB per Quad Controller using 2 GB SCSI-2 disk.

HP offers disk arrays with a variety of benefits compared to stand-alone disks; these include high data availability, data protection, increased disk connectivity, enhanced performance, online replacement of failed disks and uninterrupted access to user data in case of disk failure. The disk array controller supports up to five separate channels which can be used simultaneously for disk I/O.

Futures

Sequent will continue to stay one step ahead of its major competitors in adopting leading-edge technology. The emphasis now is on software that is specially tuned to run the best on its SMP platform. For now, Sequent is planning on using Intel 80586 processors in future systems. To continue its new emphasis of the low-end market, Sequent is working with Microsoft to port and tune Windows NT. Last but not least, they are concentrating on further enhancing their relationship with Novell (developing a parallel version of NetWare) and on finding ways to use parallelism to improve batch performance.

Some of the key issues that Sequent needs to address are as follows:

⊣   A system bus with higher bandwidth. Their servers currently use a bus with an 80 MB bandwidth which is saturated with SMP configurations of 26 processors. To support P5, a new faster system bus needs to be there. To current customers, this means a box swap is inevitable to continue to grow with Sequent's future products.

⊣   Weak performance in heavy batch workloads. The processor power of Intel processors is sufficient to drive light workloads of a few batch processes running concurrently. At this level, the I/O capabilities are important. As the workload becomes heavier with an increasing number (more than 5 or 6) of batch processes running concurrently, processor performance becomes the bottleneck. While an SMP architecture can help deliver high performance, it does not provide any benefits in a heavy batch environment. Improvement in performance depends on the performance of the individual processors. Since Sequent's processors are Intel 80486 processors, the servers are severely limited with regard to batch performance.

⊣   Many industry analysts question the viability of Sequent as an independent company in the future. Sequent's attempt to corner the high-end OLTP server is now challenged by HP, IBM, Sun, and DEC. With even increasing pricing pressure from competitors Sequent is quickly loosing its traditional technology advantage.

Sequent does not appear to have either the financial nor the technological means to stay in business.

HP 9000 versus Sequent

Sequent's Strengths	HP's Strengths	(HP's Perceived Parity
(Sequent's Weaknesses)	Weaknesses)	
-Open systems	-Financial stability	-Perception of easy
-Scalable OLTP servers	-Leading support services	upgrades
-Multivendor networking	-RISC	-Parallel processing
-Distributed computing	-Leading batch	-Aggressive
-Leading OLTP	performance	prices/discounts
performance	-Commercial UNIX	-Relationships with
-Fault tolerance	RDBMS ISVs	

	-Lower cost upgrades for
	-Use of commodity
	midrange performance
	processors
	-Incremental and fully
	compatible growth path

The issues listed under parity reflect areas that may be important in a sales situation but both vendors offer equivalent products or services.

The HP's strengths or Sequent's weaknesses reflect areas that HP should discuss and sell as being critical to the prospect's success. Being in the account first and discussing the importance of these items may set the criteria for an HP win.

Sequent's perceived strengths reflect areas that Sequent will discuss. These may be HP's perceived weaknesses and HP can expect to be challenged on these issues. The handling objections section discusses tactics to discount or turn these issues into an HP strength.

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HP's strengths against Sequent
Financial stability

HP advantage:
HP is a $16 billion company ranked Fortune 26.

Customer benefits:
HP will be a long-term and stable partner. Our financial stability
ensures we can maintain levels of R&D budgets in developing new
technologies and maintain and improve our customer support
resources.

Support services

HP advantage:
Aside from leading UNIX-based systems, HP provides an extensive
range of support, maintenance, and consulting services on a worldwide
basis.

Customer benefits:
HP's support services on a worldwide basis have been consistently
rated among the best in the industry. Customers can be assured that
any difficulties they encounter will be quickly and efficiently dealt with
by HP regardless of their geographic location.

RISC

HP advantage:
Unlike Sequent's systems which use Intel 80486 CISC processors, HP
uses state-of-the-art RISC processors.

Customer benefits:
RISC technology has proven benefits with regard to scalability,
price/performance, reliability, and easy growth paths. PA-RISC is
enabling HP to deliver systems that provide all these benefits. HP has
delivered CPU performance increases of over 60 percent per year
compared to Intel's 20 to 30 percent improvement per year. The
benefits of RISC technology have caused all the large systems vendors

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to move to RISC-based systems. Even Intel has focused efforts on delivering a RISC processor and is using RISC-like features in future processors such as the 80586. PA-RISC will protect customers' investment while allowing them to upgrade to higher performance systems in the future. Although Sequent is delivering systems with comparable performance today, their growth path is questionable. Over the next 3 to 5 years, Sequent will be forced to use higher performance RISC processors in their systems, Intel, their current processor supplier is moving to RISC technology. The investment protection that Sequent will be able to offer in moving to RISC-based systems, is very questionable even if they continue to use Intel's future processors.

Batch performance

HP advantage:
HP is far better positioned for superior batch performance. It is common knowledge that symmetric multiprocessing technology is beneficial in online applications, but does not have any advantage over a uniprocessor architecture in heavy batch environments. For batch applications such as payroll and MRP, processor performance plays a key role in determining overall system throughput for heavy workloads. HP's processors outclass the Intel 80386 and 80486 in terms of performance.

Customer benefits:
The same systems from HP can deliver superior batch as well as OLTP performance. The Symmetry systems deliver good OLTP performance but poor batch performance in heavy batch workloads. Although Sequent is examining ways to use multiprocessing concepts in order to deliver better batch performance, these projects are only in the research stage. HP's PA-RISC architecture and systems were designed specifically with the intent of being able to deliver superior online as well as batch performance.

Commercial UNIX systems

HP advantage:

HP is the premier choice of commercial UNIX solution providers and offers the largest selection of commercial applications running on UNIX systems.

Customer benefits:
The largest number of leading commercial ISVs, including those from the mainframe environment such as Computer Associates, Dun and Bradstreet, Cincom, Lawson Associates, and Software AG, have chosen HP to be the platform for their UNIX system-based products. Customers can be assured that HP will be able to provide a full range of applications for all their business needs.

Fault tolerance

HP advantage:
HP offers fully fault-tolerant systems for absolutely critical applications.

Customer benefits:
HP can deliver fully fault-tolerant systems if customers need it. These are source-code compatible with the HP 9000 Series 800 systems. Sequent does not offer fault-tolerant systems.

Complete solutions

HP advantage:
HP offers a full range of products in addition to Model 890: midrange and low-end servers, workstations, X-stations, peripherals, networking, and support services.

Customer benefits:
HP delivers all the components necessary for a complete solution to fit the customers' needs. Sequent only sells primarily high-end server and disk drives. Other components of the overall solution must be obtained from third-party vendors.

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Sequent's perceived strengths against HP

                                 ┤ Benefits of symmetric multiprocessor architecture along with mature and commonly accepted processor technology - easy upgrades, better protection against CPU failure (since the system can reboot and continue running on fewer processors), and commodity processors.

Counter with:
While SMP does provide certain benefits, Sequent's particular implementation has a few drawbacks.

-        SMP can indeed allow for simple board upgrades to achieve higher performance. HP has achieved this in the high-end systems. Note that even for systems that do not use SMP, HP has delivered the capability to improve performance with simple board swaps. To improve I/O throughput, performance gains can be achieved with box swaps. In either case, full software binary compatibility is maintained. On the other hand, SMP technology is a must for Sequent to generate adequate performance from Intel X86 chips.

-        HP is delivering systems with industry-leading reliability. If system uptime is critical, HP can offer the broadest range of high-availability solutions in the industry. Even in general, HP's product reliability leads the industry in MTBF (Mean Time Between Failure) statistics. Sequent does not even publish MTBF data for their systems - is there something Sequent would rather not talk about? Also, note that higher number of components in a system leads to a higher probability of failure.

-        Although Sequent uses commodity processors, these processors are better suited for the PC and desktop environments where low processor performance is acceptable. In heavy multiuser workloads, especially in batch environments, the Intel processors simply do not provide a competitive solution. As for RISC technology, it is becoming widespread because of its proven benefits. HP's PA-RISC architecture is rated by consultants and analysts as among the best in the industry. It is a curious fact that although Sequent uses commodity processors, their board upgrades are priced as high as some HP systems. A

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processor board for the same price as a fully functioning system, certainly doesn't seem to be a major benefit of using commodity technology.

┤   Pioneer in parallel processing technology - first with symmetric multiprocessing systems and now with parallel enabled software for RDBMS and networking.

Counter with:
SMP and parallel enabled software subsystems are the only areas where Sequent is among the industry leaders. HP has developed numerous technologies, some of which have been incorporated into industry standards. Examples of HP technologies include Motif, DCE, DME, OpenView, SoftBench, and the Distributed Object Management Facility.

As for databases tuned for multiprocessing, HP has specially tuned versions of the leading databases running on the Series 800 systems. Some of the leading RDBMS vendors are using HP's SMP systems as development platforms to tune their database products for an SMP environment. The parallel enabled networking software from Novell is also available on HP systems.

┤   Scalability of Symmetry systems - supporting up to 30 processors at the high-end.

Counter with:
Sequent has demonstrated their ability to use up to 26 processors on Model 750. However, Sequent continues to lack competitive low-end server and workstation/X-terminal client to meet the need of the client/server environment. HP provides the best and the most compatible client/server family in the industry. HP's current product line, especially the 890 family, will continue to show strong performance increase and scalability in the foreseeable future.

┤   Integration and customization services.

Counter with:
Sequent does indeed offer integration services to customers. This is to compensate for a major weakness that Sequent has, which is lack of all components required for a complete solution. HP offers not just systems but also all the peripherals and networking that customers need for a complete configuration. HP also offers industry-leading support services as necessary. HP support has been consistently

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ranked number one for nine years.