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EX-11

cc: Jeremy
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Bills

Microsoft®

TO: Distribution
FROM: Ross Chapman RC
RE: ISV Survey Results
DATE: February 11, 1991

Attached is a summary compilation of a survey that I conducted to our ISV community last December with the following objectives:

1. To assess developer satisfaction with current technical support mechanisms in general, and our OnLine service, specifically.
2. To solicit feedback about what types of additional technical support ISVs perceive that they need.
3. To solicit feedback about a sample "Certified Developer Program" that is representative of programs we may consider offering.

I would encourage you to review this as it contains a lot of valuable feedback about our support strategy from our top ISV accounts.

KEY RESULTS:

1. Over 50% of all ISVs felt that to some degree, their past development efforts have been hindered because technical resources available to them have been inadequate.
2. Over 70% of all ISVs felt that they could accelerate their current development efforts with the availability of improved technical support resources.
3. There is a clear trend expressing dissatisfaction with the quality of technical documentation supplied with our systems products (22%).
4. There is a significant level of dissatisfaction with OnLine technical support service within the ISV community (rated 5.88 out of 10).
5. There is a surprisingly high rate of device drivers development among ISVs (43%).

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Independent Software Vendor (ISV) Survey

February 1991

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Section 1: High level summary & Analysis

Introduction

This survey was conceived of late last year with the following objectives:

1. To assess developer satisfaction with current technical support mechanisms in general, and our OnLine service, specifically.
2. To solicit feedback about what types of additional technical support developers perceive that they need, if any.
3. To solicit feedback about a sample "Certified Developer Program" that is representative of programs we may consider offering.

KEY RESULTS:

1. Over 50% of all ISVs felt that to some degree, their past development efforts have been hindered because technical resources available to them have been inadequate.
2. Over 70% of all ISVs felt that they could accelerate their current development efforts with the availability of improved technical support resources.
3. There is a clear trend expressing dissatisfaction with the quality of technical documentation supplied with our systems products (22%).
4. There is a significant level of dissatisfaction with OnLine technical support service within the ISV community (rated 5.88 out of 10).
5. There is a surprisingly high rate of device drivers development among ISVs (43%).

Methodology

The population for this survey was 344 developers from 300 distinct ISV companies. The "top" 90 strategic ISV accounts of the Developer Relations Group were included in the survey. The remaining 210 companies were selected from the Developer Relations database. Companies that were marked as developing Win3 (65%) and LanMan (35%) compatible applications were selected. All information was collected via telephone interviews with appropriate developers or development managers.

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I. About the Population Surveyed

Almost all ISVs surveyed were Windows developers. Over 90% of the companies either have finished a Windows 3.0 product or are currently in development with one. In addition, the follow denotes the operating systems that these ISVs support:

OS	N	% of population
Windows	287	83%
DOS	240	70%
OS/2	156	45%
Macintosh	77	22%
Other	22	6%
Unix	37	11%
Sun OS	21	6%
SCO	13	4%
AIX	7	2%
System V	6	2%
NeXT	5	1%

The majority of ISVs were represented by two distinct company sizes (as measured by the size of the programming staff):

# of full time programmers employed	N	%
1	11	3%
2 to 10	186	55%
11 to 20	61	18%
more than 20	83	24%

Over half of the companies surveyed had between 2 and 10 full time developers on staff, 24% had over 20. The bulk of all respondents fell into these two company size groups.

SRP of the products from these companies fell into a wide range with the majority of products selling between \$100 and \$499.

II. Network and SQL Support

The following is a breakdown of which LAN OSs ISVs support:

LAN OS	N	% of population
Novell NetWare	160	47%
LAN Manager	150	44%
None	119	35%
IBM LAN Server	50	15%
Banyan VINES	42	12%
Other	91	26%

Perhaps even more interesting was to learn that of the ISV applications that support LAN Manager (N=150): there was a significant usage of native LAN Manager APIs:

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LAN Manager Support	N	% of LM population
uses the NetBIOS IPC	63	42%
uses named pipes	44	29%
uses native LAN Manager APIs	34	23%

Support for SQL Server leads both Oracle and IBM EE Database Manager by a wide gap.

Database Support	N	% of population
SQL Server	63	18%
Oracle	39	11%
Gupta SQLbase	30	9%
IBM EE Database Manager	24	7%
NetWare SQL	13	4%
Not applicable	208	60%
Other	45	13%

III. Development Tools

Not surprisingly, C is still the overwhelming favorite for a development language (92%). Far behind in second is Assembler (18%) and rising in popularity in third place is C++ (8%). Next year, I would expect the MASM numbers to decrease slightly and C++ to rise dramatically.

Conspicuously absent here are any significant usage of 4GLs or other high level tools.

IV. Device Driver Development

It was quite surprising to find out the high level of device driver development activity. Over 43% (N=147) of those surveyed have had the need to develop DDs and 52% (N=74) of those need to write these DDs across several environments (i.e., Windows and OS/2), thus necessitating a rewrite of those DDs and potentially raising the level of technical support need to finish their product.

V. Technical Support Evaluation

Reliance on technical support channels established

Today, ISVs rely mostly upon two technical resources during the development process:

1. Documentation/technical reference books [primary reliance] (rated 7.96 out of 10)
2. MS OnLine Tech. Support Services [moderate reliance] (rated 5.24 out of 10)

Therefore, it is not surprising that most of the ISV comments about resource improvements pertained to these two support mechanisms. Other resources (CompuServe, consultants, MSU, etc.) showed only residual usage by ISVs.

Evaluation of satisfaction with technical support channels

Over 50% of all ISVs felt that to some degree, their past development efforts have been hindered because technical resources available to them have been inadequate.

Furthermore, when we asked the same question in a more positive manner, almost all ISVs strongly felt that they could accelerate their development efforts with the availability of improved technical support resources.

Desired improvements in technical support

When asked what additional or improved technical resources they required, the top 6 requests were:

1. Better quality technical documentation (22%)
2. More knowledgeable/competent OnLine engineers (17%)
3. Ability to contact OnLine engineers via telephone (17%)
4. More timely responses from MS OnLine service (16%)
5. More "inside" info (i.e., pre-release code, info on futures, prod. updates, beta prgms) (11%)
6. More source code examples (9%)

This feedback points to three distinct areas for improvement:

1. Documentation.

Items 1 and 6 from above derive from comments that varied widely from general (*Better documentation*) to specific (*need source code samples for intermediate level functions in SDK's*). Because this turned out to be the number one "gripe" of the ISVs, I suggest a more comprehensive study of this issue to better understand this need. This was not a specific goal for this survey therefore, satisfaction with MS documentation was not explored in detail. Specific comments indicate that if we only concentrated on providing more a comprehensive suite of source code examples with our systems product documentation, that this would delight most ISVs.

2. MS OnLine Support Service

Comments 2, 3, and 4 relate to MS OnLine. These issues arise again in the next section that specifically explores ISV usage of this service. These results indicate that many ISVs perceive OnLine as slow and unable to address their needs. This situation must be addressed if PSS wishes to better serve the needs of our top ISVs.

3. Certified Developers Program

This type of program should target as a primary goal, the dissemination of technical and strategic information to a large group of ISVs. This would address item 5 from above. We have a pressing need to get more information to a larger group of ISVs than what the Developer Relation's group (Cameron's organization) is currently able to address. Pat Bellamah's group is addressing the issue of creating a Certified Developers Program to fill this need.

VI. Microsoft OnLine Technical Support Service

Since MS OnLine is the major technical support channel offered by MS, questions about ISV satisfaction and perceived quality of this service make up a large portion of this survey.

A full 88% of all of the participating companies either currently use OnLine (68%) or have used it in the past (20%). This seems to reflect an adequate job of marketing the service to ISVs. Even though many ISVs have OnLine accounts, the data reflects a large segment of ISVs that do not rely heavily upon it as a technical support channel. This conclusion is supported by OnLine usage data from PSS.

Of those ISVs that did not have a current OnLine account, three top reasons cited why were:

1. poor quality of service* (38%, N=38)
2. price too high (23%, N=23)
3. inconsistent need for technical support (14%, N=14)

*The three top complaints about service were:

1. Inaccurate or misleading answers (34%, N=13)
2. Slow response time (26%, N=10)
3. Inadequate knowledge of OnLine engineers (8%, N=3)

Overall satisfaction with OnLine as a support channel capable of handling ISV's support needs scored a 5.88 out of 10. The most outstanding feature about this score is its inconsistency (SD = 2.49). The data indicates an even split between ISVs who are satisfied and those who are dissatisfied with OnLine. In addition, the ISV comment that the service is priced too high is also directly related to perceived quality. There was no correlation between company size and satisfaction scores.

Other quality metrics were evaluated as well:

(10 = highest Score 1 = lowest score)

Quality Metric	Ave. Score	Std. Dev.
Handling of SRs in a professional manner	7.88	2.22
Knowledge level of the OnLine engineers	6.53	2.4
Timeliness of response to SRs	6.23	2.66
Price of service vs. value received	5.52	2.92
Completeness and accurately of answers to SRs	5.46	2.38

The perceived professionalism of the OnLine engineers (7.88) clearly scores much higher than the quality of answers given (5.46). Again, notice the high standard deviation of the responses indicating a wide variety of opinions.

The top 6 improvements that ISV would like to see made to OnLine are:

1. Better interface (Windows) software for OnLine (22%)
2. Faster turnaround time for SRs (18%)
3. Easier way to browse KnowledgeBase (15%)
4. More experienced/competent OnLine engineers (13%)
5. Phone access to engineers (12%)
6. Lower Price (7%)

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OnLine "Lite"

ISVs were evenly divided when asked about a new lower priced version of OnLine that included KnowledgeBase access and ability to pay for Service Requests on a usage basis. Half thought that if was a good idea, the other half need an unlimited ability to submit SRs. This split is along company size. Whereby smaller, cost sensitive concerns would be interested in the new program as a way to pay for technical support on an "as needed" basis, larger companies are less cost sensitive and prefer to have a full service program.

Telephone Support

When offered the opportunity to get direct telephone support from engineers, the overwhelming consensus agree that this is desirable. In addition 77% would be willing to pay extra charges for this privilege. This is because many ISVs feel that it is difficult to express the subtleties of technical problems in a non-interactive medium (current SR system) and that an interactive medium (telephone contact) is the best way to do this.

Observations about OnLine and SSBU

The following conclusions are based upon 1) the survey data, 2) my observations about the OnLine system after having worked closely with SSBU over the last 2-3 months to evaluate how this service might better address ISV needs.

1. Areas where PSS (SSBU) is responding aggressively to address ISV needs

1. The introduction of OnLine 2.0 (windows-based) interface software is imminent. This will address the #1 complaint today about OnLine service.
2. Telephone support is currently included in the business plan for OnLine 2.0. This may also fill a large void and improve the perceived value of OnLine amongst the ISV community.
3. PSS has created the position of *KnowledgeBase Engineer* with the goal to improve the quality of KnowledgeBase (both in indexing and quality and timeliness of data).
4. The formation of an Escalation Desk for difficult SRs is a promising development if effective.
5. Formation of an experimental ISV support group (Developer Plus beta) that consists of the most senior PSS engineers who will address the most complex issues of ISVs.

2. Areas where improvements still need to be planned and implemented

1. *The "knowledge gap" between PSS engineers and Development engineers must be lessened.* It is a common complaint from ISVs that responses from PSS engineers to SRs are quite inadequate and reflect insufficient in-depth knowledge of MS products and schedules. This situation can be addressed in two ways: 1. More in-depth research into difficult SRs and 2. a committed PSS interface within each product development group. This interface would become a guidance resource for the PSS engineer in the case of especially difficult technical inquiries. This would also facilitate cross training of resources whereby PSS engineers would get a better insight into the internals (and workarounds) of MS systems products, and Development engineers would have exposure to what "real-world" problems are being encountered with the products they develop, and how these products are being used. Another idea to close this gap would be to require new hires in Development to spend a training period within SSBU as a way to get to know MS products prior to initialing their duties in Development.

Formation of an "Escalation Desk" is only half of the battle. Without committed PSS interfaces within Development, the Escalation Desk may only slow down the SR resolution process further by putting up more "hoops".

2. *Consistent policy for responding to SR bug reports.* More diplomacy is required by PSS engineers when their answer to an SR may inherently displease a customer (i.e., there is no fix for this problem, or

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that they've uncovered a bug that is not scheduled to be fixed, MS doesn't believe that the problem is a bug). Often times, responses to technical questions unnecessarily annoy OnLine customers and make them feel that MS is unresponsive to their needs.

Even though PSS engineers are technical professionals, there needs to be increased awareness that, first and foremost, theirs is a service organization where customer satisfaction is the most important asset to protect. This does not mean that we'll always be able to deliver a fix to the customer. It does mean, however, that in all cases:

1. we will be able to quickly acknowledge a problem or bug in MS system software
2. assure the customer that the problem has been reported to the appropriate sources (i.e., Development)
3. provide a well-researched workaround, and if possible a date when a fix within the product will be forthcoming (i.e., update or revision)
4. maintain a posture appropriate to a service organization where delivering the best solution to the customer in a diplomatic manner is of prime importance, no matter what it takes.

As a follow-up procedure, I suggest that OnLine 2.0's voting mechanism incorporate questions that prompt the customer to specifically give feedback about these points.

Those who like us, those who don't

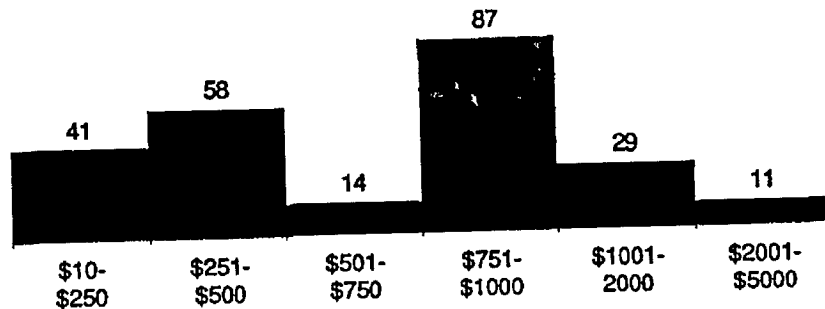
It is my contention that it is the most technically sophisticated ISVs that are dissatisfied with OnLine. This is due to a couple of factors. First, this group of ISVs post the most difficult queries about the "bowels" of our system software. OnLine engineers are often not well equipped to answer many of these difficult questions. Development groups do not often cooperate with PSS in a fashion that expedites the closure of difficult OnLine Service Requests (SRs) due to their aggressive product delivery schedules.

Conversely, it is the ISVs that submit less sophisticated SRs to OnLine that have a high degree of satisfaction with the service.

VII. "Certified Developer" Program

We asked ISVs what would be the most important support mechanisms that would like to see made available to them if MS were to offer a "certified developer" program. The #1 request (N=153) was for direct telephone access to more experienced engineers, preferably those who develop the code. Secondly, (N=83) many thought that OnLine technical support service should be included as a component of such a program and thirdly, (N=18) ISVs wanted access to more updated documentation and source code examples.

There was a wide diversity of opinions on what such a program should cost the ISV:



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These results are not surprising since our current OnLine service costs \$895 annually. We have already set pricing expectations in this range.

Mediums for dissemination of technical information within a developers program

There has been some debate whether using a BBS for support/information dissemination is appropriate. The data indicates that over 99% of the ISVs had access to a modem which makes this a viable option. This is in contrast to only 50% who had access to a CD ROM drive. Therefore, distributing developer info via CD ROM might still be premature.

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Section 2: List of participating ISVs

Abacus Software Inc.	Boston Systems Group	Desktop Data, Inc.
Accelerator, Inc.	Bradford Business Systems	Digital Communications
Access Development Corp.	Broktree Corporation	Digital Composition Systems
Access Softek	Bryan Research	Digital Research
Accounting by Design	Burrell Business Systems	Digitalk, Inc.
Adobe Systems, Inc.	Button Ware Inc.	DMB Electronics, Inc.
Adonis Corporation	Cannan Analytics	DFMS
Advanced Programming Techniques	Canon USA	Drover Technologies
Advanced Vision Research	Capella Systems, Inc.	Dynamic Solutions
Affinity Microsystems	Cardkey Systems	Dynix Marquis
AIM Systems	CaseWorks, Inc.	East Valley Graphics
Airttech Corp.	Castelle	Eastern Language Systems
Ajida Technologies, Inc.	CC Mail Inc.	Easyspec, Inc.
AJS Publishing, Inc.	CCI	Echelon Development Corp
AI Corp	Cedalion Systems Inc.	Eden Soft
Aldergaf Systems Inc	CEIT Systems Inc.	Edmark Corp
Aldus Corporation	Central Point Software	Eikon Systems, Inc.
ALH & Assoc.	Certus International	Electro Tek Concepts, Inc.
Alien Computing	CF Software	Electronic Music Co.
Alsys	Chanel Computing Inc.	Emerald Systems Corp.
American Digital Technologies, Inc.	Chesapeake Computing	Enable Software Group, Inc.
AMRAK Group	Cheyenne Software, Inc.	Farallon Computing, Inc.
Ancrir Technology	Chicago Mercantile	Fifth Generation Systems, Inc.
Anderson Consulting and Software	Chizatro Laser	Fiam & Russell, Inc.
Answer Software Co.	CODA Music Software	Fox Software
Application Design T	Colorado Memory System	Frame Technologies Corporation
Applied Systems Technologies Inc.	Columbia Software	Fresh Technology Group
Arbitron Co	Computer Control Systems, Inc.	FTG Data Systems
Archetype	Computer Logics Ltd.	FIP Software
Architecural Synthesis, Inc.	Computer Presentations, Inc.	Fulcrum Technologies
Argo Data Resource Corporation	Computer Support Corp.	Future Soft Engineering
Art Soft Inc.	Computer Systems Advisors, Inc.	Future Tech Systems, Inc.
Arthur D. Little Inc.	Connect, Inc.	Gammalink
Ashlar Inc.	Consumers Software, Inc.	Gamry Instruments, Inc.
ASPen, Inc.	Cooperative Solutions, Inc.	Generic Software
Asymetrix Corporation	Coordination Technologies	Geographix
AT Engineering	Coromandel Industries, Inc	Geotech Computer Systems
AT&T Computers	Cracchiolo & Feder	Geovision Inc.
Attachmate Corporation	Crandell Development Corp.	Glenco Engineering
Austin Digital	Creative Programming	Gold Hill Computers Inc.
Authorware, Inc.	CSS Labs.	Graphic Software Systems
Automated Design Systems, Inc.	Da Vinci Systems Corp	Graphx
Automatic Data Process	Data General	Great Plains Software, Inc.
Automation Concepts	Data I/O Corporation	Guidance Technologies, Inc.
Automatix	Data Support	Gupta Technologies Inc.
Axiom Chromatography	Data Wiz International	Halcyon Software
AXON Instrument Inc	Datacap, Inc.	Hammerlab Corp.
Baler Software	Dataproducts Corp.	Harris & Paulson
Baylis Automation	DBSE	Hewlett Packard
Baysoft	DCA / Crosstalk	Hilgraeve Inc.
BCS Scientific	Dega Technology	Horizon Technologies
BDMP Statistic Software	DeLorme Mapping Systems	Howell Training Company
Binar Graphics	Delphi Systems	ICD
Bio-Rad Labs	Delrins Technology inc.	ICOM Simulations
Bioscan Inc.	Deltapoint	Iconix Software Engineering
Blake Programs	Describe	Image Business Systems
Blyth & Associates	Design Science Inc.	Imagesoft
	Desktop Communications	ImageTech Inc.

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Imara Research Corp.
 Indigo Software
 iNet
 Information Builders Inc.
 Informix Software Inc.
 Inner Media
 Intellicorp Inc.
 Intercin
 Interleaf Inc.
 Intersoft, Inc.
 Iris Associates, Inc.
 Jensen and Partners International
 Kamel Software
 Knowledge Ware Inc.
 Kofax Image Products
 Kumulus Corp.
 MACCESS
 MAGICorp Ltd
 Map Info Corporation
 Mark V Systems
 Matesys Corporation N. America
 McClure Consultants
 mdbz KG
 Meta Systems Ltd.
 Micro Decisionware
 Micro/Resources
 Microcom Software
 Microdimensions
 Micrografx, Inc.
 Microlabs
 Microrim, Inc
 Microteck Lab, Inc.
 MIDAK International, Inc.
 Migraph, Inc.
 Mirus Corporation
 Modern CAD
 Multiscope Inc
 Multisoft Corporation
 Netwise, Inc.
 Nevis Technologies, Inc.
 New Tools
 Novell, Inc.
 OKNA Corporation
 Open Books
 Oracle Corp
 Orko Corp.
 Palindrome Corporation
 Palisade Corporation
 Palsoft
 Paradigm Systems Inc.
 Parc Place System
 Pioneer Software Systems
 Popkin Software and Systems, Inc.
 Premier Software
 Premise Inc.
 Prisma Software Corp.
 Pugh-Roberts Associates, Inc.
 Pyramid Development Corp
 Quadrel Corp.
 Qualisoft Corporation
 Quest Development Corp.
 Quinsoft, Inc.
 R Company
 R.D. Software
 Radix MicroSystems, Inc.

Rainice
 Realia Inc.
 Revelation Technologies, Inc.
 RFF Electronics
 Rochester Software Connection
 Roland R & D Chicago Inc.
 Roykore Software, Inc.
 Saber Software
 Sage Software
 Samna Corp (Louis)
 Saros Corp.
 SAS Institute, Inc.
 Share Communications
 SLR Systems
 Softbridge Microsystems
 Softshell International
 Software Group
 Software Products International
 Software Publishing Corporation
 Software Ventura Corp.
 Software Workshop
 Sophia Systems and Technology
 Span Instruments
 Spinnaker Software Corp.
 SPSS
 SQ Software
 SQL Soft System Integrators
 SSS Technologies
 State of the Art, Inc.
 Strategic Technologies Group
 Sybase, Inc.
 Symantec Corporation
 Symbologic Corp
 Synoptics Communications
 Sytron Corporation
 Tektronix
 Telemet America, Inc.
 Teleware Inc.
 The Fair Issac Companies
 The Software Org. Inc
 Tidemark Corporation
 Timberline Software
 TMS
 Togai Infra Logic Inc.
 Traveling Software Inc.
 Turbo Power Software
 Video Seven
 Viewlogic Systems Inc.
 Viewpoint Systems
 Vinzant, Inc.
 VZ Corp
 Wang Labs
 Wave Trek Corporation
 Well Data Inc.
 West 80 S.R.L.
 Wilson Window Ware
 Winsoft
 Within Technologies
 Wordperfect Corp.
 Wordstar International
 Wordtech Systems, Inc.
 X Tree Co
 XDB Systems
 Xian Corporation
 XNet

Zenographics, Inc.
 Zortech
 Zsoft Corporation

COMPANIES = 305

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Section 3: Detailed survey data & statistics

1) Which operating environments does your company develop products for?

Windows	287	83%		
DOS	240	70%		
OS/2	156	45%		
Macintosh	77	22%		
Unix	37	11%		
Sun OS	21	6%		
SCO	13	4%		
AIX	7	2%		
System V	6	2%		
NeXT	5	1%		
Other	22	6%		
VMS	8		MPE	1
MVS	3		Nerware 386	1
Motif	2		Univax	1
HP3000	1		CMS	1
IBM Mainframe	1		AS 400	1
IRMX	1			
Mini--proprietary	1			

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2) Which network operating system does your application support?

Novell NetWare	160	47%		
LAN Manager	150	44%		
None	119	35%		
IBM LAN Server	50	15%		
Banyan VINES	42	12%		
Other	91	26%		
NetBIOS	12		AS 400	1
TCP/IP	8		Bases	1
AppleTalk	8		DOS	1
Any Win compatible	4		EXCELAN	1
MS Net	4		IBM DLC/IPX	1
All LAN	2		In-house network	1
DecNet	2		IRMX, UNIX	1
LANtastic	2		NFS	1
Network ind.	2		Ollie Net	1
Ungerman Bass	2		PCP, IPC	1
Token Rings	1		Sun NSS	1
Tops	1		SunSystem w/PC NFS	1

(If application supports LAN Manager from question #2)

3) What statement(s) accurately describe your support for LAN Manager?

Our application uses the NetBIOS IPC	63	42%
Our application uses named pipes	44	29%
Our application used the native LAN Manager APIs	34	23%
Don't know	13	9%
	<u>154</u>	

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4) Do any of your applications contain "back-end" support for any of the following databases?

SQL Server	63	18%		
Oracle	39	11%		
Gupta SQLbase	30	9%		
IBM EE Database Manager	24	7%		
NetWare SQL	13	4%		
Not applicable	208	60%		
Other	45	13%		
DBase	5		DBC, 3+	1
DB2	4		DM	1
DB Vista	3		Focus	1
Informix	3		Generic	1
Ingres	3		In-house database	1
Custom (no DDE)	2		Mainframe VSAM	1
Excel	2		NECS	1
Paradox	2		Q&E via DDE	1
Sybase	2		STB Server	1
AS 400	1		Superbase 4	1
Btree	1		Vista	1

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5) How many full-time programmers does your company employ or contract?

Employees	N		Category
1	11	3%	One man operation
2 to 10	186	55%	"small" company
11 to 20	61	18%	"medium" company
>20	83	24%	"large" company
	341		

This question was used to gauge the approximate size of the company.
Throughout this survey certain questions are cross tabulated with this question to determine what effect company size has upon response.

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6) Please list how many of your products currently on the market fall into the following categories:

	Per Company		N	Don't know
	Average	St.Dev.		
<\$99	1.82	5.34	146	11
\$100 to \$499	3.45	5.72	207	12
\$500 to \$999	2.27	4.73	166	11
\$1000 to \$1999	2.38	12.4	149	12
>\$2000	4.88	14.7	171	13
No answer to any part of #6	14	8%		

7) Which statement best reflects your development efforts with regard to an applicaton specifically designed for the Microsoft Windows 3.0 environment?

Already completed	206	61%
Currently in development	100	29%
In the planning stages	24	7%
No plans to do it	9	3%
	<u>339</u>	

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8) What is your primary software development language(s)?

C	314	92%	(Some firms put more than 1 primary language)
MASM	63	18%	
C++	28	8%	
Pascal	12	3%	
FORTRAN	5		
Cobol	5		
Modula-2	4		
DB Fast	2		
Foxpearl	1		
Prolog	1		
Voltalk	1		

9) Do you write device drivers in the course of your product development?

Yes	147	43%	
No	195	57%	Skip to #11

10) Does your development effort require that you write device drivers across several software environments?

Yes	74	52%
No	68	48%

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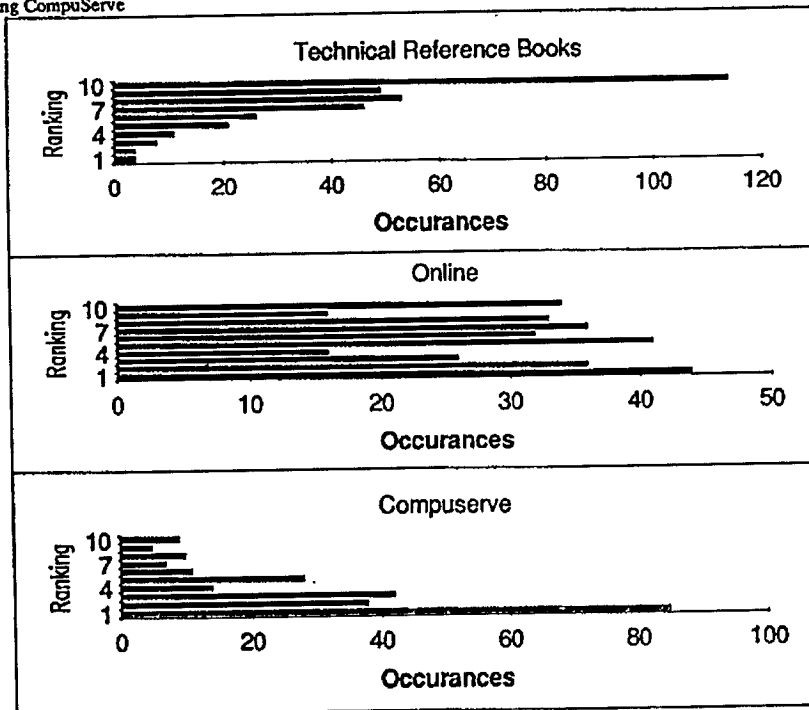
11) Please rank each of the following technical resources 1 through 10 to indicate how much you use them during your product development cycle.

where: 10 = we rely upon very heavily
1 = we use very little

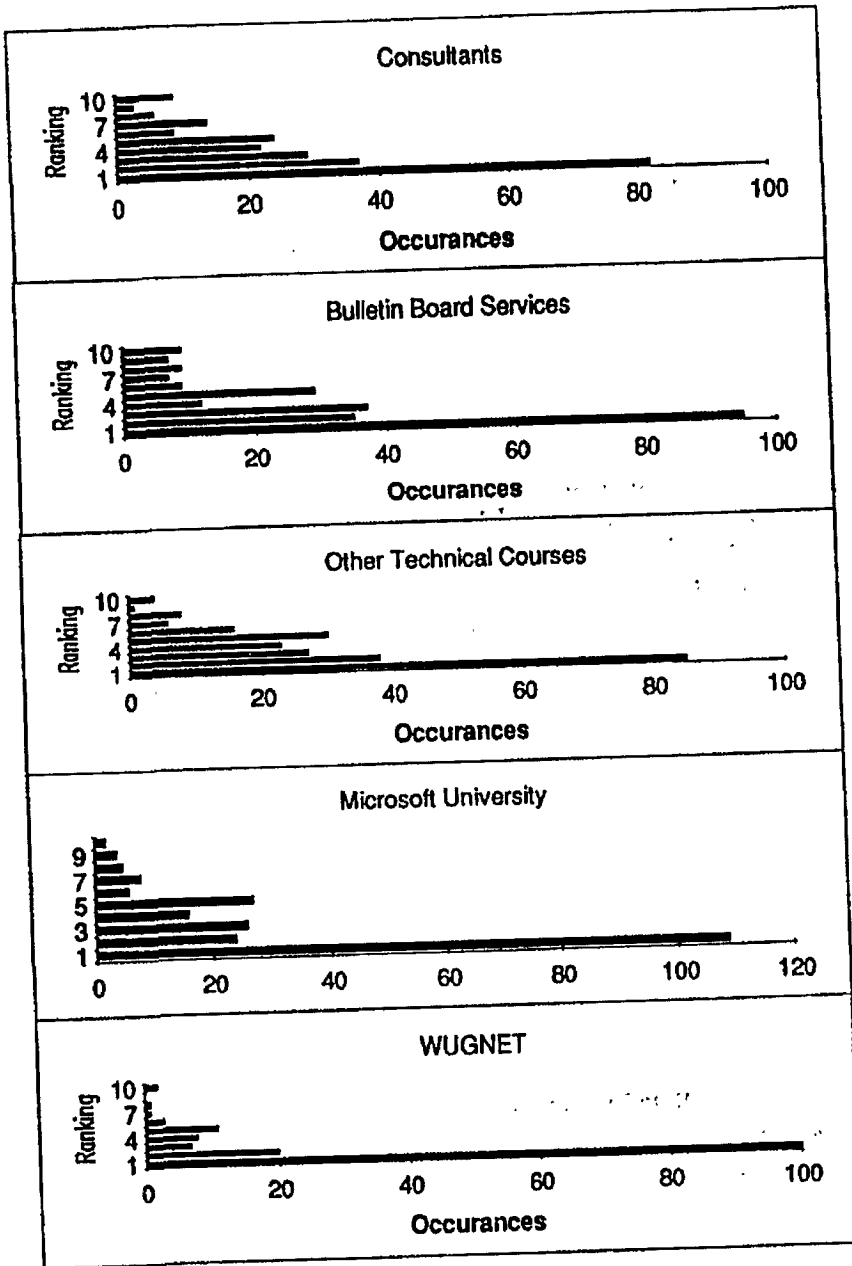
(Those not rating a resource did NOT affect these statistics; Assigning them a zero would, of course, lower the average and increase the standard deviation.)

	Average	St.Dev.	Mode	Median	N
Technical reference books	7.96	2.210	10	8	336
Microsoft OnLine Support Service	5.24	2.975	5	5	314
CompuServe	3.20	2.584	1	3	249
Consultants	3.20	2.580	1	3	235
Bulletin Board Services*	3.15	2.624	1	2	249
Other technical courses	3.02	2.322	1	2	238
Microsoft University	2.60	2.354	1	2	227
WUGNET	1.74	1.936	1	1	153

*Excluding CompuServe



Developer Relations -- ISV Survey



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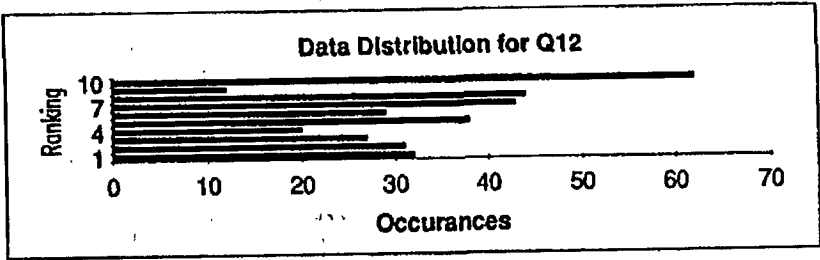
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Please indicate your opinion about the following statements with a number from 1 to 10.
 10=Fully agree
 1=Fully disagree

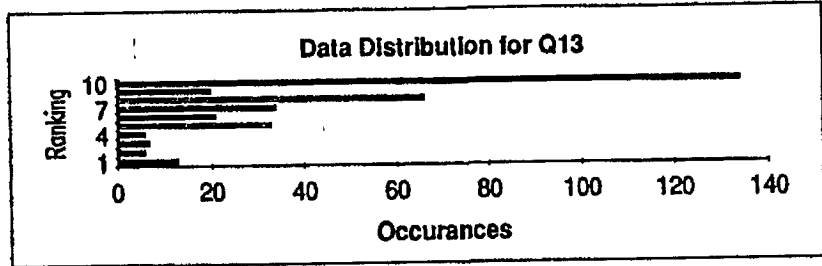
12) Our product development cycle has suffered delays due to insufficient information or support as provided by the combination of these above services.

Average 5.9
 St.Dev. 2.975
 Median 6
 Mode 10
 N 340



13) Our product development cycle could be accelerated if we had access to additional or improved technical resources.

Average 7.772
 St.Dev. 2.483
 Median 8
 Mode 10
 N 342



Developer Relations -- ISV Survey

14) What additional or improved technical resources do you need?

N	Desired Improvement
67	22% Improve documentation - provide more in-depth doc
53	17% Improve the knowledge/competency of OnLine Engineers
51	17% Provide direct telephone access to engineers
48	16% Improve SR response time
34	11% want inside "scoop" directly from MS (access to strategic prod. info/future releases/beta programs/pre-release code)
27	9% Provide more sample source code
23	7% Improve OnLine - Make more accessible
16	5% Publish and maintain an accurate bug list database
15	Provide better programming utilities
8	Provide OnLine for a lower price
7	Improve OnLine User Interface (Windows)
7	Improve accuracy of SR responses
7	Publish list of all available tech resources
6	Provide designated engineer for OnLine accts.
5	Improve indexing/search capabilities of KnowledgeBase
5	Access OnLine over Compuserve/InterNet - Use CS more
3	OS/2 version of OnLine software
3	Updates to documentation in a timely manner
3	Don't charge OnLine connect time for bug reports
3	Provide OnLine for free
3	Provide C++ support for windows development
3	Publish list of available technical reference books
3	Make high-level consultants available
3	Better use of BBS - to communicate with other ISVs
2	Hardcopy of KnowledgeBase
2	Better use of CD ROM for information dissemination
2	Emulate Apple's developer program
1	evaluation of product w/o purchase
1	more OS/2 releases
1	more training centers on west coast
1	more sophisticated DDK (bin. adapt. kits)
1	OS2 2.0 SDK - support for problems
1	File formats for MS products--library format/resource files for Win(prntd or online).
1	Re: Windows development--Online info not completely open. Internals and tricks to interface hard to access.
1	MS too slow to debug its products.
1	Need conferences at MS on Key Areas. Good, advanced texts on Win programming--like Petzold's but more adv.
1	Excel developers program: trouble getting answers to tech problems
1	we provide a lot to MS but don't get enough back
1	Cheaper development kits and should be available w/out OnLine
1	Rather satisfied with On-line MSJ
1	Foreign language support usable by americans without using Japs' stuff.
1	MS BB go away from compuserve but have one that people can call in & not pay connect chrgs
1	More func. built into Wins-higher lev. win func. (ie ask user for file name) easier DDD, exampl
1	More windows classes

Developer Relations -- ISV Survey

- 1 Support for retooling conversion for Pascal developers to move to C.
- 1 adv guide to prog'ing windows by Petzold -adv techniq. tips, short cuts, undocum.features.
- 1 More detail on how compiler switches interact w/one another.
- 1 800 number
- 1 extende program SDK program
- 1 local teaching of MSU courses
- 1 advanced library support
- 1 meet scheduled ship dates
- 1 software upgrade
- 1 tech notes
- 1 more emphasis on assembly language
- 1 better products
- 1 better performance from a large company like MS
- 1 more publications
- 1 better journal
- 1 more support for beta pgms
- 1 expand MSU video courses

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Developer Relations -- ISV Survey

15) What best describes your usage of Microsoft OnLine Electronic Support Service?

	Total		Small Co.		Medium Co.		Large Co.	
Currently use*	231	68%	121	35%	49	14%	61	18%
Have used in the past**	69	20%	46	13%	9	3%	14	4%
Have never used**	29	8%	19	6%	2	1%	8	2%

*Those that have a current account skipped Q16 and went right to Q17

**Those without a current OnLine account were asked Q16, then skipped to Q24

16) Please tell us why your company is not currently using OnLine?

Reason	Have used in the Past		Have never used		Total	
Quality of service*	38	38%	6	6%	44	44%
Price	23	23%	6	6%	29	29%
Only need very infrequent access to technical support	14	14%	9	9%	23	23%
Other methods of technical support satisfy our needs	4	4%	5	5%	10	10%
I don't have enough information about OnLine	2	2%	6	6%	9	9%
No active development projects that require technical support	3	3%	4	4%	7	7%
CompuServe currently satisfies need	1	1%	2	2%	3	3%

*Elaboration on quality:

- 13 34% Responses are inaccurate/misleading
- 10 26% Response time is slow
- 3 8% Inadequate knowledge of OnLine engineers
- 2 5% Low value bad administration and reputation
- 2 5% Support should be free
- 1 KnowledgeBase info outdated and comm. software not good
- 1 Not enough info available--per other contacts
- 1 Online data is not helpful
- 1 So little given
- 1 Unsure of quality and significance of service

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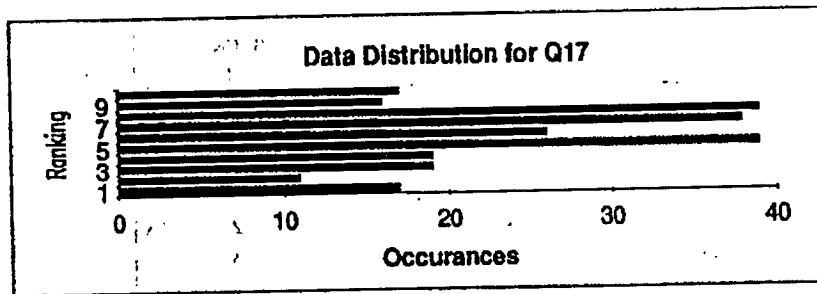
Please indicate your opinion about the following statements with a number from 1 to 10.

10=Fully agree

1=Fully disagree

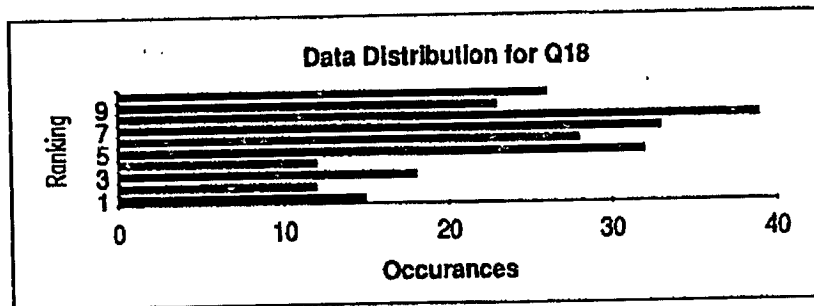
17) We've found OnLine to be capable of handling our tech support needs

Average	5.88
St.Dev.	2.493
Median	6
Mode	8
N	242



18) We've found OnLine to post answers to SRs in a timely fashion

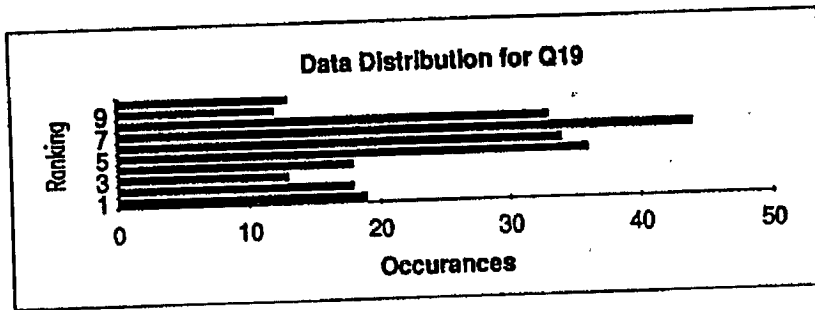
Average	6.221
St.Dev.	2.608
Median	7
Mode	8
N	240



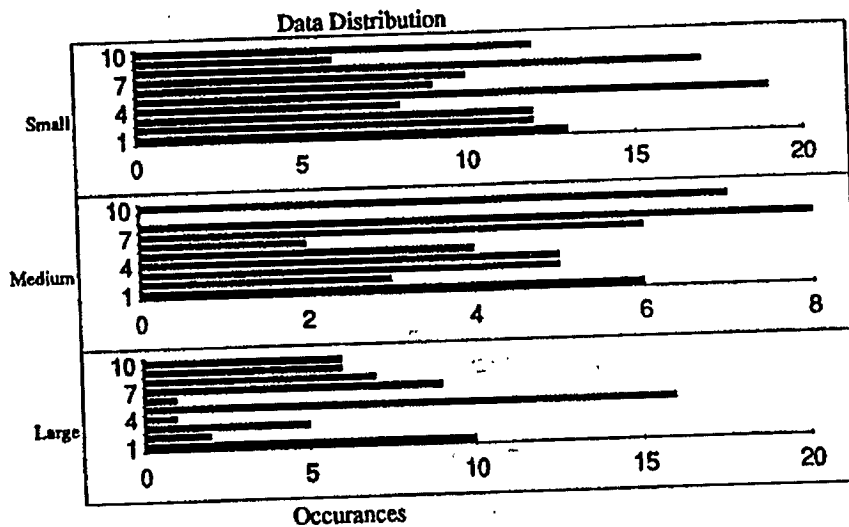
Developer Relations -- ISV Survey

19) OnLine typically answers our questions completely and accurately

Average 5.669
 St.Dev. 2.458
 Median 6
 Mode 7
 N 242



20) The price of the OnLine service is a good value for us

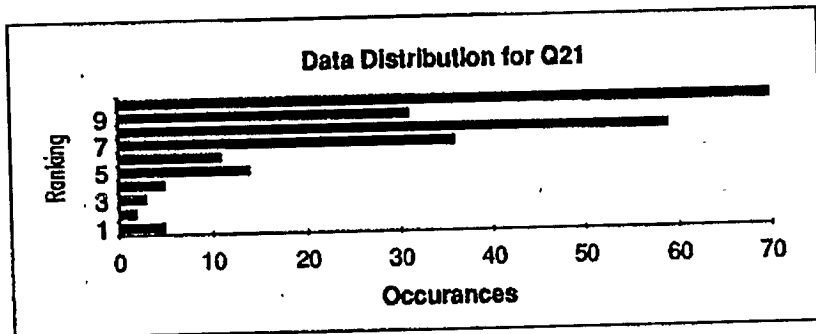


	Small Co.	Med. Co.	Large Co.	Total
Average	5.37	5.54	5.59	5.4
St.Dev.	2.85	3.01	2.9	2.91
Median	5	5.5	5	5
Mode	5	8	5	5
N	118	46	63	237

Developer Relations -- ISV Survey

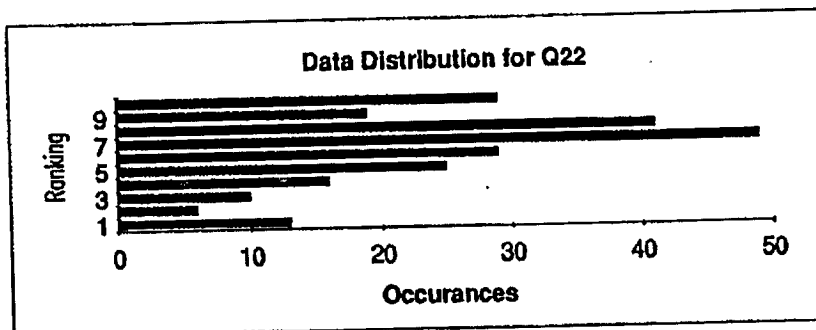
21) The OnLine engineers consistently handle our SRs in a professional manner

Average 7.95
St.Dev. 2.043
Median 8
Mode 10
N 238



22) The knowledge level of the OnLine engineers is adequate to understand and address our technical problems

Average 6.544
St.Dev. 2.407
Median 7
Mode 7
N 239



Developer Relations -- ISV Survey

23) If you could list only 3 improvements that you would like to see made to MS OnLine service, what would they be?

N	Desired Improvement
77	22% Improve OnLine User Interface (Windows)
61	18% Improve SR response time
52	15% Improve indexing/search capabilities of KnowledgeBase
44	13% Improve the knowledge/competency of OnLine Engineers
42	12% Provide direct telephone access to engineers
24	7% Provide OnLine for a lower price
18	5% Publish and maintain an accurate bug list database
16	5% More/Better info in KnowledgeBase - More frequent updating
14	4% Provide more sample source code in S/W Library
13	4% Better/More reliable email and BBS software
9	3% Charge by usage/ not fixed price
9	3% Provide designated engineer for OnLine accts.
8	2% OS/2 version of OnLine software
8	2% Increase data transmission speed
7	2% Improve accuracy/quality of SR responses
7	Easier physical access
7	Faster access / Software currently too slow
7	Want advance info thru KnowledgeBase (beta product, unreleased spec and info)
4	Access OnLine over Compuserve/InterNet - Use CS more
4	Provide OnLine for free
4	Improve OnLine - Make more accessible
3	Better use of CD ROM for information dissemination
2	Improve documentation - provide more in-depth doc
1	Don't charge OnLine connect time for bug reports
1	Hardcopy of KnowledgeBase
1	800 Number
1	easier customer communication
1	if a product SDK is available there needs to be more support
1	entire KnowledgeBase available to developers - more info
1	MS should do it instead of GE
1	More knowledge on fonts--esp. PostScript
1	Engineers should accept multiple question on one SR
1	don't split out by product-ask all questions on one acct.
1	Support for multiple users at site thru single acct.
1	Better service, cant contact anyone on line about his account
1	Feedback on problems w/3rd party drivers (name/# for 3rd party)
1	Overall the service is laid out well
1	access thru wide-area network (modem pool)
1	more areas of specific interest available
1	more communication about how products are supported
1	Should have to deal with Novell
1	Links to popular email systems
1	A totally different support system is needed
1	Very convenient if used for Beta programs
1	Need method of prioritizing based on input time
1	Developer prog.w/enhanced suppt w/cost sharing thru consortium

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- 1 Problems with other's download information
- 1 Seems out of date, hard to use
- 1 Clearer names for ICONS etc
- 1 Some way to send in executable instructions to MS for bugs
- 1 BB isn't useful. People use unpleasant language
- 1 Lic agreement objects to contract
- 1 access to documentation
- 1 better integration
- 1 site licensing problems fixed
- 1 lessen crashing of software
- 1 improve extracting text info from online to local file
- 1 info on new products
- 1 dev. update pkg. monthly
- 1 consistency of support from one product to another
- 1 no time limitations - don't kick them off after an hour
- 1 greater differentiation w/respect to different organizations
- 1 wider selection of products
- 1 take BBS out of on-line package
- 1 info on SQL back in on-line
- 1 ability to link into on-line thru any communication pkg.
- 1 Have software available on disk rather than by modem or CD
- 1 Don't close SR's till customer has been given a fix
- 1 Knowledge Base distributed
- 1 Make operating system more solid- don't desert OS2
- 1 General acc. of info in the tech level they need
- 1 cut out rating of SR's resp w/each to reduce downloading.
- 1 Not have to use password everytime, put into configuration
- 1 Able to change input
- 1 build kb locally based on items transf. to local cabinet
- 1 More integ. w/intern.MS info. More dwnld time.cust updt on-l

Developer Relations -- ISV Survey

24) If MS were to offer a low cost service product for \$295 per year whereby you would have access to Knowledge Base and could optionally submit Service Requests for an additional fee for each SR submitted, would you purchase this service?

	Total		Small Co.		Med. Co.		Large Co.	
Yes	190	55%	116	34%	32	9%	36	10%
No	142	41%	64	19%	26	8%	46	13%
Don't know what KnowledgeBase is	2	1%	1				1	
No response	10	3%						

If no, why?

N		Reason for not purchasing
44	31%	Full service required (frequent use, want flat fee, unlimited SRs)
13	9%	KB is unorganized and not comprehensive
12	8%	Infrequent use
7	5%	Depends upon additional "per SR" fee
6	4%	Should be free
5	4%	Bad history, OnLine not good, must become better
4	3%	If took off 295/yr. and Knowledge Base (SR only)
3	2%	Because of the poor quality of the SR Engineers
2		Most SRs are bug reports, won't pay for this
2		Too expensive
1		Compuserve has KnowledgeBase for free
1		Happy with price of current service
1		Not useful--projcts usually pre-relse
1		Overkill!
1		Should charge only for time used

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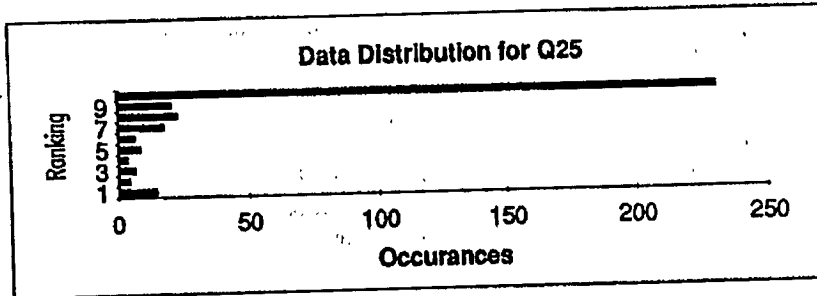
Developer Relations -- ISV Survey

Please indicate your opinion about the following statements with a number from 1 to 10.

10=Fully agree
1=Fully disagree

25) In addition to the support modes currently offered by MS OnLine, direct telephone access to MS support engineers would be of value to me

Average 8.7
St.Dev. 2.465
Median 10
Mode 10
N 340



26) Would you be willing to pay an additional fee for this service?

Yes 267 77.62%
No 64 18.60%
No response 13 3.78%

If no, why?

N	Reason
18	28% Phone support should be included for no additional fee
7	11% Engineers respond by phone anyway, satisfied with current service
6	9% SRs are preferred medium, prefer written communications
5	8% Depend upon cost
4	6% Don't need it
2	3% On-line is too expensive
2	3% SR response is fast enough
1	Not necessary if SRs are processed fast
1	Not satisfied w/current service
1	Put efforts into speeding up SR's
1	Would prefer BBS

Developer Relations -- ISV Survey

27) Do you have, or can you easily get access to a modem?

Yes	341	99.1%
No	1	0.3%
No response	2	0.6%

28) Do you have, or can you easily get access to a CD-ROM drive?

Yes	174	50.6%
No	168	48.8%
No response	2	0.6%

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Developer Relations -- ISV Survey

29) If you could customize your own "Developer Support Program" that would offer the support mechanisms you need most, what would they be?

N	Response
153	44% Direct access to engineers and phone support
83	24% Online
18	5% Access to updated Tech. doc. & source code examples
9	3% Ability to direct to questions to more knowledgeable sr. support rep
9	3% Buglist and Knowledge Base and doc. on CD (with updates)
7	2% Faster turnaround
3	Designated contacts at ISV site and MS.
3	BBS posting of most commonly asked questions, bugs
2	KnowledgeBase
2	Some way of getting fax or modem response w/in 24 hrs.
1	A form conducted by levels with Knowledge Base first
1	A PSR service to answer questions
1	A real person to talk to
1	Ability to follow up with an engineer
1	Ability to make SR's
1	Access to knowledge base
1	Accurate on-line reference material
1	Batch downloads of updates
1	Better bug lists
1	Better development tools - better code
1	Design it like AppleLink
1	Developers relations program with free technical support
1	Easy to use online service
1	Electronic access to all info about programming in Win
1	Fire fighting function when something is broken
1	Free support for developers
1	Good On-line support
1	Have available (for fee) tech specs for specific file formats
1	In depth knowledge of API's (development tools)
1	Include Excell support in on-line package (and Windows)
1	Knowledge base limited of tech responses
1	Low priority items through SRs to OnLine
1	Lower prices for companies with lower priced products
1	Make all environment run under Windows including compiler
1	Mobile service rep that could go in-house
1	Modem hook-ups with Email
1	More advanced knowledge base for MS Windows
1	More font support
1	More info accessible to developers at earlier state
1	MS tech representatives in the office
1	Pre-release info on a consistent basis
1	SDK - live support when problems arise
1	Simple online system
1	The basic on-line system
1	Timely bug fixes from MS
1	Timely mailings of documentation and seeded software

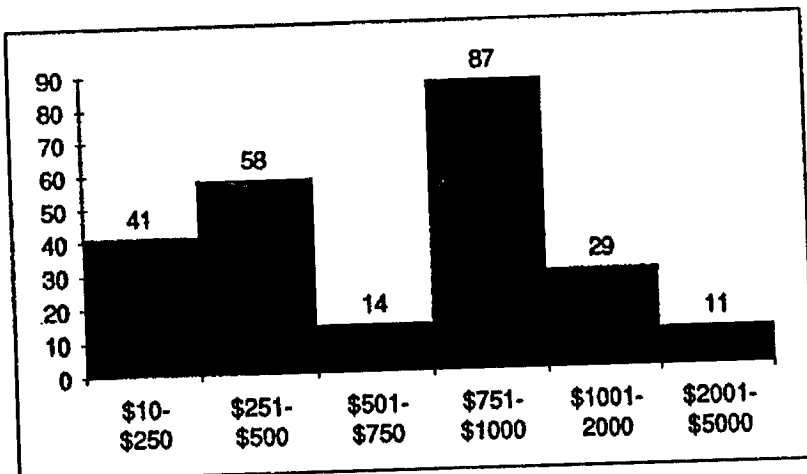
Developer Relations -- ISV Survey

- 1 Training videotape with developers kits
- 1 Unlimited access to KnowledgeBase
- 1 Updated bug reports on a BBS
- 1 Updated newsletter info (buglists, etc.)
- 1 Use compuserve or better on-line software

30) What annual fee would you be willing to pay for this "program"?

Average	\$893
St.Dev.	\$750
Median	\$795
Range	\$0-\$5000
N	227

Price Range	N	%
\$10 to \$250	41	17%
\$251 to \$500	58	24%
\$501 to \$750	14	6%
\$751 to \$1000	87	36%
\$1001 to \$2001	29	12%
\$2001 to \$5000	11	5%
	240	



Non-numeric answers:	Count	Description	Count
Free	11	\$10 per use	1
Based on usage	6	\$200 +usage	1
3 level use fee	3	\$295 +per usage	1
Free for 3 months	1	\$295 w/usage	1
Multi-tiered	1	\$50/per hour	1
No idea	1	Depends on product	1
Prefer hourly	1	Depends on size	1
Current price	1	First fix bugs	1
Dedicated tech: \$8500	1	Same as OnLine	1