PC PowerHouse : When and How?

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by
Suzanne Harmon
AH Computer Services, Inc.
8210 Terrace Drive,
El Cerrito, CA 94530-3059
(415) 525-5070

Users of Cognos' PowerHouse product have been waiting years for a PC product. Now that the product is available, how do the pricing, hardware requirements, functionality and performance affect when we will use the product. When we do decide to use the product for a specific requirement, how do we make it work, what are the perils and pitfalls?

This paper will focus on deciding to use the product and making it work once the decision is made. Its merits and downfalls are discussed as they pertain to:

- stand alone applications
- emergency PC level back up for HP3000 applications
- PC processors of HP3000 based data
- development work stations

Using the product will focus on the specific differences this user found in each of the following products: Dictionary, Quick, Qdesign, Quiz and QTP.

I've been waiting almost three years for Powerhouse to be available on PC's. During that time Speedware, Powerhouse's biggest 4GL competitor on the Hewlett-Packard, Oracle, an important development contender, Synergist, and other products have been, or become, available on the PC. Last fall our company began BETA testing the PC Powerhouse product. The product was released for general sale early this spring.

Many companies have come to see PC's as major "players" in their overall automation strategies. Their use until now has been primarily relegated to office automation, spread sheet analysis, and allowing certain maverick departments to design their own stop-gap applications using PC based tools such as DBaseIII. The advent of major 4GL's and development products, already available on mini and mega-mini machines, porting their products to PC's dramatically changes the choices available to today's businesses.

Our company does a substantial percentage of system development using Powerhouse. For us, a PC version of the product would give us the following options:

Developer's Workstations - Our telephone expenses directly attributable to dial-up to client's HP3000's for development runs $2000 to $3000 a month. We are also at the mercy of the client's back-up schedules, peak production periods, and so on, which may severely impact our ability to put in the time we need to meet our commitments on a project. Therefore, we have had high expectations of developing and testing systems or pieces of systems on the PC and then porting them to the HP3000 for final testing and implementation.

Host Computer Extension - Many applications have functions which are very data entry intensive, or which must be up and running at all times if the company is to remain open for business. We have often wished we could run such pieces of a system on PC's, or at least have that as an option during busy periods, or at times when the HP3000 was down either expectedly or unexpectedly.

Standalone PC Applications - We have an application which we sell as a package, which many potential customers have wanted for years, but their budgets would not enable them to purchase the requisite HP3000, though almost all of them have PC's or can easily obtain them. We have been very eager to release this system as a PC package, and in fact it is this system which we converted to the PC for one of our BETA tests. We also have, as I'm sure all of you do too, many ideas for easy to develop systems which would be much in demand if they were available on PC's.

More recently, a whole new trend in the industry has made me consider a fourth option as possibly the most exciting of all. We have many clients who have offices, or regions, or divisions who all need the same system, but who vary dramatically in size. Where one site may justify a model 58 or 70, another may barely justify a PC. The idea of being able to develop one application system for the client with the assurance that he can install it

on a PC, an HP3000 or a Spectrum opens up a new world of possible configurations for cost effective distributed processing.

With these goals in mind, we enthusiasticly welcomed the arrival of PC Powerhouse. The first issue in our minds was: What is the minimum hardware I need to use this product (When you read this paper, please keep in mind that it had to be written and submitted a full three and a half months before Interex, so I cannot be assured that what is true when I am writing it will still be true when you are reading it). Cognos lists the hardware requirements as:

IBM PC-AT or 100% Compatible
- DOS version 3.2 or later
- 640K RAM
- 20MB hard drive (PC Powerhouse occupies 5MB)

IBM PSII Model 50 and up
- OS/2 version 1.0
- 2.5MB RAM

Optional performance enhancements
- 1MB or more expanded memory

We have tried the product on a variety of IBM PC-AT Compatibles, both 286 and 386. The configuration requirements as stated are accurate. However, we did find a couple of things worth mentioning. On one of our 386 machines, we had 512K of main memory and 2MB of extended memory, which is being managed using the Deskview memory manager product. Though this allegedly makes our machine "look like" it has 640K of main memory, in addition to the 60K used by DOS, 40K is used by the memory manager. Powerhouse requires that the entire remaining 580K (after DOS) be available for its use. Because Deskview is using 40K, only 540K is available to Powerhouse, and Powerhouse will not run on this machine. There are allegedly two solutions which we have not yet tried. The first is to buy an "Above board" of 128K or more to expand the main memory without the use of a memory manager. The second is that supposedly using Windows as the memory manager will enable us to run with the present hardware configuration. Though the product will certainly run with a 20MB hard drive, I would not recommend that you seriously consider doing anything with less than a 40MB hard drive. We filled up a 20MB hard drive very quickly and ended up having to clean-up and swap stuff to floppies constantly. We also feel that investing in the fastest disc drive you can find will pay off if you intend to use the product very extensively, as waiting for disc IO will come as a major shock to anyone who is used to working on an HP3000, however slow and overloaded. The newest release we have says you can put your temp files on virtual disc (in memory) to speed things up.

We have not tried the product on a PSII. We have also not tried the relatively recent enhancement allowing you to enhance performance with the automatic use of expanded memory. This is reportedly a rather major performance improvement.

What we found, was that a "reasonable configuration" which would run the product will cost a minimum of about $2500. This is assuming that you feel, as I do, that buying an AT which doesn't have a color monitor is sort of like buying a Rolls Royce with

vinyl upholstery. However, this price does not include a super fast drive, expanded memory, a printer, and so on. To really create a developer's workstation would probably run a minimum of $4000.

Now that we have the hardware, what's next? Well, PC Powerhouse isn't cheap. The pricing for 1 - 4 copies is $1295 per copy plus shipping. For 5 - 24 copies it goes down to $995 per copy plus shipping, and so on. This price includes a very basic version of Reflections, which allows you to do terminal emulation and file transfers. It does not include an editor, even though the "main menu" has an exit to editor as one of your options. This is to allow you to create an interface to the editor of your choice. Run time versions of the product are available, so that once the developer has created the application, not every user must fork over the full development copy price. Run time (with or without reporting) must be bought in "minimum lots" of 25 copies (with reporting) or 50 copies (without reporting), with a pricetag of $395 per unit (total $9875) or $150 per unit (total $7500) respectively.

We were incredibly impressed from the outset with the attention that had been given to the ability to port dictionaries, code and data from the HP3000 to the PC. However, the entire structure of Powerhouse use on the PC is much closer to Powerhouse on the VAX than to Powerhouse on the HP3000. Discussing this briefly will help with understanding the "port" process.

File Structures - HP3000, or host files, are not directly accessible by PC Powerhouse, the way they are from the Synergist for example. You must create subfiles from the HP3000 and pull these down to the PC. On the PC you do not have Image or Image-like file structures with PC Powerhouse. You have the equivalent of MPE files and KSAM files.

File extensions versus Groups - On the HP3000 we can keep our source or compiled Powerhouse code wherever we want, and every system seems to have a different idea of what group names to use. When Powerhouse ported to the VAX, they standardized to fixed file extensions, which has carried over to the PC product. All Quick source is in .QKS and all compiled Quick is in .QKC and so on. Therefore, within your source code, you may not include file extensions such as "RUN MYSCREEN.QKS."

Menu Driven - though you can override this and run Powerhouse programs directly from DOS, Powerhouse can also be used as an entirely menu driven process by entering PH at the prompt.

Automatic conditional compile recognition - There is now some standard "recognized" conditional compile syntax. If @IF PC is used, and Qdesign executes in PC Powerhouse, it will automatically recognize the condition as true. Similarly, if @IF HPMPE is used, Qdesign executing on an HP3000 MPE based machine will recognize the condition as true. Thus, one set of programs which can run on both the HP3000 and the PC can be maintained by simply making conditional that code which must differ between the systems. This is true from the dictionary through all of the "programming" products.

Obsolete syntax - For those of you who still have programs which use "string" instead of "character" (like me), and other obsolete syntax from versions prior to 5.xx, all such code must be removed prior to porting. Obsolete syntax is strictly not allowed.

Security - Since PC Powerhouse is not yet a multi-user product, there is no security syntax such as users, locking, and so on. This code must be omitted from the PC version of programs.

Blockmode - Yeah!!! Blockmode is not available in PC Powerhouse.

Items - Due to storage differences between the PC and the HP of certain types of data items, you must be careful to specify size at the element level rather than the item level and to be careful in redefine situations.

Subfiles - Subfiles on the PC are always permanent, whereas on the HP they are temporary unless specified otherwise. Your disc space can fill up very quickly with subfiles you thought were temporary on the PC.

Temporary Files - Beware of temporary files (Powerhouse sort and work files) which are normally deleted at the end of a Powerhouse session on the PC, but will not be deleted if there is an abnormal interruption of Powerhouse. These, too, will fill up your disc space.

Some of the features which are available on the PC are extremely exciting in terms of creating sophisticated and appealing applications. A few of my favorites are:

Color Usage - Color can be used for hiliting, line drawing, background, data, etc. The combinations are mind-boggling and can be aesthetically pleasing or nauseating, as you choose.

Windowed Screens - A called screen can overlay the calling screen in any window you choose, for any length, width and location. You can stack these on top of each other to the point that the screen looks something like all the papers on my desk overlaying each other and peaking out here and there.

Field Editting - For lack of a better description, you can now type over the data in a field the way you always could in block mode, rather than having the current data disappear before you can enter your changed data.

Scrolling Fields - One of my very favorites! If you have a very full screen and a 40 byte name field, for example, you can display 20 bytes of it and scroll the data left and right. Quick provides a little asterisk beside the field to let you know there's more.

Before discussing performance, I have to confess to you that I am a very neophyte PC user. Therefore, my expectations were that by having this whole machine to myself, with 640K of main memory and 20MB of hard disc, things were going to fly! If you are not a neophyte PC user, then you know that I had a rude shock awaiting me. Besides the fact that PCs are slow compared to even heavily loaded HP3000s, the early beta versions of the PC product were very slow. Cognos has spruced up the performance by many

magnitudes, and as a PC product it now performs respectably.

Given hardware requirements, functionality, price and performance let's review my current thinking on the various uses the product might have.

Developer's Workstation - Our general feeling after a couple of attempts to use the product for this purpose is thumbs down. First of all, equiping a developer's workstation for use with PC Powerhouse is far more costly than a developer's workstation to be used as a terminal to the host via Reflections or whatever. Second, if you have a tendency to flip back and forth a lot between an editor and Qdesign, which our staff tends to do, you spend half your life waiting for the editor to load or Qdesign to load. Actually, we felt it took 3 to 4 times as long for these functions to load. Third, we use a lot of "tricks" in Powerhouse, which we feel give the product an enormous amount of flexibility and versatility, such as using Quick to write Quiz programs based on user input. Many of these things can't be done in PC Powerhouse due to the limitations of DOS. Therefore we found ourselves only being able to use the PC for a limited subset of the development. We also do a lot of development with Omnidex, which can't be tested on the PC. Our general feeling was that if you are using the product to get up a relatively easy application or prototype, it would probably be great, but for the kind of development we do it was too time consuming and too limited.

Host Computer Extension - As a data gatherer, PC Powerhouse would be great! You wouldn't get caught up in programs loading because you could stay inside Quick the entire time. The user could madly enter data all day, which could be easily uploaded at night, using far more attractive screens than are available on the host. It would also be ideal for allowing user reporting from data extracts downloaded from the host.

Standalone PC Applications - This is probably tied for ideal uses for this product. If a user is strictly a PC user, the performance issues which might drive me crazy will seem perfectly normal to them. A client of mine recently demoed one of their applications to me which runs on a PC (not Powerhouse). I couldn't believe how long it took for screens to load, etc. Compared to that, PC Powerhouse looks like a Grand Prix winner. Furthermore, all the advantages of an HP3000 application developed in Powerhouse, such as ease of maintainability and short development cycles, will also be true on a PC.

Distributed System Flexibility Maximizer - The value of PC Powerhouse for this use depends a lot on the application. If the application is so complex that it falls victim to many of the problems inherent in using the product for a development workstation, then it is likely that such a large amount of the system will have to be developed and maintained individually for the PC and the host that any possible benefit will be lost. However, if less than 20% of the system would be different for the two versions, it could be a very major benefit to use this approach. Coming out with a remote file access capability could also change the appeal of this option.

In general, the product was a mixed bag of exceeding my expectations in some areas and not meeting them in others. I

think we will use the product extensively, but I think we will approach it more cautiously that I would have projected a year ago.