GQ&A

"I'm not sure what the word 'nerd' means"

Bill Gates talks to Terry Pratchett about the future, the Microsoft revolution and how to become a billionaire

WILLIAM H GATES III, or "Bill", as he prefers to be known, is the chairman and chief executive officer of the Microsoft Corporation, the world's leading supplier of PC software. Microsoft's products include the MS-DOS operating system, used on 90 per cent of the world's personal computers, and Windows, the icon-based software package designed to make MS-DOS accessible even to technophobes. Gates was born in Seattle, Washington, 39 years ago and began writing computer programs when he was just thirteen. In 1974, while at Harvard, he developed BASIC, a simple operating system for thew world's first small personal computer, the MITS Altair. The next year, sensing that the PC business was going to explode, he left university and founded Microsoft with his childhood friend, Paul Allen. Since 1975, Microsoft has grown to become a software colossus: employing more than 16,000 people in 27 countries; last year its net revenues totalled $4.65 billion. Gates' own worth is estimated to be about $9 billion – give or take the odd hundred million.

TERRY PRATCHETT is one of the world's bestselling authors, with over 6 million books in print. He is best known for his seventeen Discworld novels, a science fantasy series in which the planet Discworld travels through space on the back of four elephants and where dogs go "woof bloody woof." The series has proved so popular that a Discworld video game was released this year. Born in Beaconsfield 46 years ago, Pratchett began writing when he was twelve. He had his first novel, *The Carpet People,* published when he was twenty. He worked for a time as a reporter on local newspapers before becoming a press officer for the Central Electricity Generating Board. When, in 1987, his fourth Discworld book, *Mort*, became a bestseller, he left the world of hackdom forever and became a full-time author. Pratchett now writes two to three books a year. He insists he is not as rich as Bill Gates. Terry Pratchett and Bill Gates met on the Microsoft coach, en route from London to Birmingham, in late March.

TP: *I read a load of English interviews and articles about you last week and the word "nerd" would always turn up some time in the first three paragraphs.*

BG: Not from me…

TP: *No, but how do you feel about the "nerd" label?*

BG: I'm not sure what the word "nerd" means. I'm fascinated by science and computers, so you can hand me a book on biotechnology and I'll go into a room for five hours and read it and I'll come out laughing. I haven't seen a lot of people do that so I suppose that's unusual and there must be some label for it. The thing that seems a little unfair is that the term "nerd" implies that you don't like working with people and you can't communicate – you have like the opposite of charisma. I don't know where I rate on charisma, but hiring people and leading the company and sitting down with customers, those are things that I love to do. I think those are neat things.

TP: *I think "nerd" is gradually becoming a comparatively friendly label.*

BG: No, "nerd" is boring. A "nerd" is a guy who never went out with good-looking girls. I think they were, like, staying at home or something.

TP: *I think the word we have now is "spod". A "spod" will talk to absolutely no one but his computer. Do you have that word in the States?*

BG: "Spod"? No, we definitely don't have that.

TP: *Still, you are now a semi-mythological figure: these articles always mention the bulldozer races [Gates is said to have organised bulldozer races on construction sites with his friends] and the $200 pizza [Gates was supposedly once so impatient to eat that he offered $200 for immediate delivery].*

BG: The non-existent $200 pizza! Yes, it turns out that the most inaccurate stories are the ones that get repeated.

TP: *But people are prepared to believe them…*

BG: Now, the bulldozers – that's true. But the pizza…

TP: *How about the story about the Porsche that's still in your garage because it can't be crash tested? It is a Porsche, isn't it?*

BG: Yes, I own one. Paul [Allen, Microsoft's co-founder] decided to buy this 959 Porsche and I liked it and I said, "Fine, I'll buy one too." Anyway, they're sitting in a garage somewhere…

TP: *Because they can't be crash tested?*

BG: Yes, they're not certified for use in the US.

TP: *There was a tone of voice to these articles that seemed to be what I*

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call "sneer and jeer." I think the English have a hard time accepting a guy who's made a lot of money doing something that he wants to do, and is continuing doing what he wants to do even though he's made this money. We can only tolerate billionaires providing they appear to be lovingly eccentric. That's why Richard Branson gets away with it.

BG: He gets good press? I guess if you're an industrial giant and you can get this underdog billionaire image… Anyway, whatever sells newspapers.

TP: *Were you successful because you wrote good [computer] code or because you were an astute businessman?*

BG: I wouldn't pick either of those in isolation. You know, Microsoft was the first computer software company and we had a vision not only of what would happen, but of taking a very focused role in it. Back then, there was no room for a software-only company. You might have a hard time appreciating that, but all the software was written by the hardware guys: they did the chips, the operating systems, the languages, even the applications. So the idea of starting a software company and not doing our own hardware was a very unusual thing to do. Certainly if you take our BASIC, the reason our BASIC was used on virtually every personal computer was because it was the best BASIC and it was a very tight piece of code. But there's no way we'd be successful unless we were very careful about how we hire people and how we structure things. You can't just take one aspect; it's all of those things coming together with some timing and luck.

TP: *And where is the new Bill Gates? Where is the opening now? You were there at the beginning, when people could invent a new sort of computing. There were lots and lots of little companies. It was kind of a frontier.*

BG: Well, remember that if DEC or IBM or even Wang had recognized what we were doing and did it themselves, there wouldn't be a Microsoft – at least not to the degree there is today. The way things turn out relates to what other people do and don't do as well. So if you look around now and say OK, what opportunity is there, it would be something I don't know about. I am by definition the person who doesn't know what the next Bill Gates is doing. Is it artificial intelligence? Is it a new user interface? Is it speech recognition? Times are changing faster now than they were back then. Remember, in 1975 I dropped out of school because I thought it was urgent – but nothing happened. We sold about 4,000 kit computers and only half the people were able to assemble them. We drove around the country starting up computer clubs and the computer clubs became the groups that copied our software without paying us. I mean that was a *big* year. There were two of us and we didn't make enough money to live. And 1976, was that a big year? Not really. Each year kind of built in terms of what we were doing. But there's as much opportunity now as ever before. Another thing to remember is that Microsoft didn't set out to become Microsoft. I never conceived at any point in our history that we'd go on to be the size

or have the success we have today. If you'd asked me at any point in the past I would have said, at most, that we'll have double the number of employees we had then: when we had 100, when we had 500 and even today when we have 16,000. I can tell you with great certainty we'll never have more than 32,000 employees. I'm quite convinced of that, even though I've been wrong every other time that I've made a similar prediction.

TP: *I'm on the Net, and people think I know something about computers, so friends come to me and say, "We think we ought to get on the Internet", and I ask, "Why?" and they mumble about email…*

BG: Good!

TP: *But they're not really certain what e-mail is. I think they just have a vague idea that the future's happening now, that the roulette wheel is spinning and the ball is bouncing around, and they don't want to be in the wrong place when it stops. If it's ever going to stop! No one ever thought like this before, about the fax machine or the telephone or the motor car…*

BG: Oh, that's not true. Fear of change is a constant.

TP: *But this isn't change, this is… It's as if the Neanderthal man was wandering around saying, "Hey, there's these Homo Sapiens starting up, maybe we want to get our genes altered." There's a feeling that there is something huge happening.*

BG: Every technological advance has created that kind of over-expectation. Change is happening faster today and communication around the world is better today, so this particular frenzy may exceed others, but the character of it is quite consistent.

TP: *Is the future being over-sold, though? That's my fear – that people are joining the Net expecting some kind of transcendental experience only to go away deeply disappointed.*

BG: Of course it's over-sold: it's a mania, it's a frenzy, it's a gold rush. There are people over-promising; there are ideas that make no sense; there are new companies being financed that will go bankrupt. It's kind of crazy, but at least it's getting people to pay attention to something that's very important. You know, I'm not only a believer, I'm a preacher. I'm spending hundreds of millions hoping that the Net will come true. It's valid for society to start thinking about what we should do with this in education, what we should do with this in public health, what we should do with this in political organisation. What about privacy? And haves versus have-nots, and all the other important issues?

TP: *But the information superhighway, or whatever it's going to be called, is not going to run into every home, is it?*

BG: Well, there are people like the Amish who reject modern technology – I don't think we'll win them over this time either.

TP: *You think you're going to get everyone but the Amish?*

BG: Half the world has never made a phone call. I doubt that someone who doesn't have a phone in his home today will have a computer in his home in the foreseeable future. I don't think there's ever been a technology that appeared in every person's home all at the same time. Most things take time between the first person having it and all of humanity having it. I mean, books are still going – they've been around for a while – but literacy isn't universal.

TP: *You mentioned the difficulties you had in the very early days with computer clubs ripping off your BASIC. I frequently get contacted on the Net by kids who say, "Hey, I've scanned in your short story that appeared in such and such a magazine. Is it OK if I post it on the Net?" At least they ask, but there's other people out there who do not understand what copyright means, what trademark means.*

BG: I think they don't understand what capitalism means.

TP: *(Laughs) Are you proud to be a capitalist?*

BG: I think capitalism is a good system. It's not a perfect system, but it's… I think most people underestimate how effective it is.

TP: *Sure, I'd like anyone who reads one of my novels to pay me.*

BG: Yes, the whole notion of incentives is a deep area and it's not one that is explained as well as it probably should be.

TP: *The other thing that I thinks should concern us is good information and bad information. Do you understand what I mean when I say that?*

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BG: Not really.

TP: *OK. Let's say I call myself the Institute for Something-or-other and I decide to promote a spurious treatise saying the Jews were entirely responsible for the Second World War and the Holocaust didn't happen. And it goes out there on the Internet and is available at the same terms as any piece of historical research which has undergone peer review and so on. There's a kind of parity of esteem of information on the Net. It's all there: there's no way of finding out whether this stuff has any bottom to it or whether someone has just made it up.*

BG: Not for long. Electronics gives us a way of classifying things. You will have authorities on the Net and because an article is contained in their index it will mean something. For all practical purposes, there'll be an infinite amount of text out there and you'll only receive a piece of text through levels of direction, like a friend who says, "Hey, go read this", or a brand name which is associated with a group of referees, or a particular expert, or consumer reports, or the equivalent of a newspaper… they'll point out the things that are of particular interest. The whole way that you can check somebody's reputation will be so much more sophisticated on the Net than it is in print today.

TP: *It sounds like a very good time to be a librarian.*

BG: Yes, there's a lot of value to be added by intermediaries who go through this stuff.

TP: *You travel around a lot as a kind of salesman for Microsoft. Or are you a salesman for the future?*

BG: Well, I think the future is irresistible and probably doesn't need a salesman. There are people who try to stop time but I don't think they've ever been successful, so there's no need to sell the future.

TP: *But you have become a guru, haven't you?*

BG: Well, I'm somebody who people sometimes pay attention to. The word "guru" implies a lot that isn't accurate. You know, I run Microsoft, that's what I do. Our business is to make software products, not to dispense advice to people on how to live their lives or something like that.

TP: *Yet people look to you for this kind of advice. You were talking to government ministers last night, after all. [Gates had dinner the previous night with Michael Heseltine, president of the board of trade, and Ian Taylor, shadow minister for public service and science.]*

BG: People are interested in my views as a technologist because they want to know how to best prepare for these things. I'm writing a book that will probably be out this year that kind of paints a picture of what I see as a technologist and lets readers judge for themselves. There seems to be quite a thirst for information on technology, and I'm one of thousands of places people might look to get an interesting opinion.

TP: *OK, can you give me the lowdown on the technology of the next twenty years? What will you be, for want of a better word, forecasting for the future?*

BG: Well, in the next ten years you won't see much in the way of robots -- that is, autonomous units under computer control. To create something that has real utility in terms of moving autonomously raises some tricky issues. Over the next ten years, visual recognition is a problem we'll solve quite well and so you'll be able to do quite a bit more with what people might term robots in twenty years, although a lot of them will be low-centre-of-gravity devices. So computer vision will come in in a very, very big way in that time frame.

TP: *And what will we use the robots for? I can see only one use in our house -- I really wish the vacuum cleaner would come out at night and go around the rooms very quietly.*

BG: How about cleaning the kitchen and food preparation?

TP: *In twenty years time?*

BG: You told me to speculate. I don't guarantee it. I don't own any robot companies. I told you I don't think robots will be big in the next ten years, except as intelligent toys. But I think if you

take twenty years, one would be unwise not to consider that that might be a substantial phenomenon for the time period.

TP: *But will anyone be able to work them?* New Scientist *did a survey a few years ago and found that many of their readers, who are largely scientists and technical people, had not programmed the time on their VCR because they didn't understand how to do it.*

BG: Of course, it's the world's worst user interface – there's no feedback as to whether you're doing it right or wrong. Blind interfaces are always complicated. Everything we're talking about will have screens to guide you and when you pause there'll be a built-in personality that'll immediately jump in and help you. But anyway, VCRs will be obsolete within ten years.

TP: *What? Completely obsolete?*

BG: Yes, completely obsolete.

TP: *And replaced by a disc player?*

BG: Oh, they'll be replaced by a disc player within four or five years. I'm talking about access to media across the network.

TP: *We're getting close to Arthur C Clarke's famous sayings that "sufficiently advanced technology is indistinguishable from magic".*

BG: Yes, that's right.

TP: *And I think we seem to be heralding the magic age.*

BG: Oh, I think every step has been magic. When people sat down and moved bits around on the screen they thought that was pretty magical. When computers first had lower case characters that to me was magic. We'd been using only upper case for so many years, and to have this little terminal, with 30 characters a second in lower case, it was a breakthrough. You know for weeks we just dropped our jaws staring at it.

TP: *There's still magic in technology. It's amazing how readily people will ascribe emotion to an inanimate object. A friend of mine who had to send me a disk which I just couldn't access on my machine finally sent it again saying he'd actually copied it this time from the computer upstairs, which was unaware of the conspiracy that the computers downstairs were engaged in. He meant it as a joke, but underneath it all there was this slight uneasiness: we are dealing with something that appears to respond. Where does it end? The pace of personal computer technology, which you are largely responsible for…*

BG: Well, we're as much a servant as anyone else because we don't…

TP: *No, please, I must contradict you on that. Why do you need a shit-hot PC? To make Windows run fast. If you're just using DOS, it's fine on a 286. The people out there buying the*

486s and buying the Pentiums are buying them because of the existence of Windows: they want Windows to be very fast, they want Windows to be very colourful. So the software is driving the hardware now, surely?

BG: We work closely enough together that you really wouldn't know who is driving who. Windows was certainly out well before machines that could run it reasonably. And so the machines had to catch up to grab the interface. A lot of communications things – these digitals, these modems that do voice and data across the same line – I think those are a fundamental advance. We have the software already, we're waiting for the modems, which will come out over the next year. The two need to be working in concert.

TP: *I keep wondering what happens next? What is the goal? What are we heading towards?*

BG: Creating tools that allow people to realise their potential. So if you're young and you're curious you can get the answers to your questions… What we're doing is creating tools that make work and education and even entertainment more interesting. It's a tool and where it all ends depends on your feeling about man's potential.