



After Bill

Microsoft knows what it wants to do when Bill Gates leaves—but the road ahead will not be easy

“DOES Microsoft still have a big, hairy audacious goal?” Not everybody would presume to ask Bill Gates a question like that. But Mr Gates was this week due to remove himself from the firm's day-to-day business, to become its non-executive chairman, and Tim O'Reilly, a noted internet guru, felt emboldened to commit lese moeste. Putting “a computer on every desk and in every home” had been the original mission of Microsoft, which Mr Gates founded more than 30 years ago. But now the job is pretty much done, at least in the West, and Microsoft is the world's largest software company. What is its mission now, Mr O'Reilly recently asked at a technological shindig, called “All Things Digital—other than just to sell as much software as it can?”

Mr Gates (pictured with Craig Mundie, Microsoft's chief research and strategy officer, left, and Ray Ozzie, chief software architect, right) is leaving Microsoft for the charitable foundation he set up with his wife, Melinda, even as his firm is in some disorder. Windows, Microsoft's all-con-

quering operating system, has become so complex, some say, that it is collapsing under its own weight. Its latest version, Vista, is not a complete flop, but it is a huge disappointment. Many users prefer the previous one, XP, and Microsoft is already hyping the next, Windows 7. Microsoft is also struggling to keep up with Google, its main rival. It recently announced a product that pays consumers money if they buy something through an advertisement next to its search results—a gambit that smacks of desperation. And the firm's aborted bid for Yahoo!, an online giant, has done nothing to reassure investors. As a result, Microsoft's shares continue to do worse than the industry average. Some observers have started to wonder whether Microsoft should not break itself up—for instance into a legacy business, containing Windows and Office, a service unit, and games, where the company has recently been most innovative.

Mr Gates's reply to Mr O'Reilly was not entirely reassuring. The firm, he said, now has dozens of “quests”—revolutionising te-

levision, automating data centres and creating software ten times faster. Perhaps this fragmentation of Microsoft's ambition is only natural. In its 33 hectic years the company has swollen to nearly 90,000 employees (see charts on next page); revenues this year should exceed \$60 billion and net income reach almost \$18 billion. Even Microsoft's own senior executives struggle to grasp its growing empire. The firm now sells 75 different products, many of them in lots of versions.

In fact Mr Gates could easily have given a more pointed answer. Of all that Microsoft hopes to achieve in the post-Gates era, one goal dominates all others—even catching Google. That is to become the dominant force in the forthcoming era of cloud computing—or, to refresh Microsoft's original mission: “to supply services to every desk, to every home and to every hand”. That ought to be big and hairy enough to satisfy even Mr O'Reilly.

To understand what that means, and the difficulties it poses Microsoft, start with the idea that computing is undergoing one of its great periodic shifts. In its early days, most computing took place on mainframes. Ever-falling costs led computing to shatter—first into minicomputers, then into personal computers (PCs) and, more recently, hand-held devices. Now communications is catching up with hardware and software and, thanks to cheap broadband and wireless access, the industry is

> witnessing a pull back to the middle. This is leading much computing to migrate back into huge data centres. Networks of these computing plants form "computing clouds"-vast, amorphous, delocalised nebulae of processing power and storage.

Service with a simile

Marc Benioff, a cloud-computing pioneer and the boss of Salesforce.com, which helps firms manage their customers on the web thinks this will spell the "death of software". Rather than being a big chunk of code sitting on a hard disk on your desk, software will come "as a service" over the internet through a browser. This idea is also espoused by Google. Although the online giant is best known as the world's biggest online search and advertising firm, it now also offers many other services-plenty of which compete with Microsoft's pc programs.

Not so fast, says Mr Ozzie. He has been Microsoft's chief software architect since 2006 and will steer its technology after Mr Gates goes, while Mr Mundie will take over as the company's long-term thinker and public face. "Whenever these things happen, people think that it is going to be a complete extreme shift," Mr Ozzie says. "But in reality customers are very pragmatic and figure out the right mix of old and new stuff." This mix, he argues, will depend on where people are, which device they use and what they want to do. Instead of the death of software, Mr Ozzie speaks of "software plus services"-the title of Microsoft's new strategy.

He thinks of cloud computing differently. Fewer people will put the PC at the centre of their computing universe; it will be one of many devices connected through the web, which Mr Ozzie calls the "hub". But what sounds like bad news for a firm making PC software is in fact a huge opportunity, he says-because this new set-up sits well with Microsoft's DNA. The heart of its business has always contained a simple, powerful idea: find a market that is global in scale-one that is split between lots of vendors and so dysfunctional; then integrate the various parts into a "platform" and develop its chief applications; and finally, build an "ecosystem" of developers writing programs for it.

This has been Microsoft's approach to its largest products-with Windows as the most successful. Versions of this operating system run on over 90% of the billion PCs in use, because Microsoft has excelled at building an ecosystem around its platform, in particular by giving developers the tools for their job. This supercharged what economists call "network effects": the more applications run on Windows, the more attractive it becomes for users; that, in turn, attracts more developers, and so it goes on. Although Mr Ozzie hesitates to put it in such terms, his goal is to create a kind of

Windows in the cloud. "If you were to build an operating system today," he explains, "it would not be a single piece of software that operates a single computer."

He is first tackling device integration. In a recent internal memo, which Microsoft made public, Mr Ozzie talks of "a personal mesh of devices—a means by which all of your devices are brought together, managed through the web as a seamless whole." This mesh will make sure, for instance, that devices automatically synchronise important files, such as an address book, and that one device can control the others. Windows has other similarities with the platform Microsoft wants to build in the cloud. The firm plans to provide developers with tools to weave services together into new offerings. And it will give them ready-made routines, such

a bad idea, since it is precisely what many in the industry are trying to do. Yet the cloud will be based more on open standards than on proprietary technology. It is too big and too diverse to be dominated by one provider. And governments would be unlikely to allow one firm to control such an important infrastructure.

As Mr Ozzie rightly points out, it is the very essence of the shift towards services, that computing now allows for applications and data to sit where it is technically most appropriate-or, just as important, where users prefer. And people are not about to throw out their powerful PCs or other "client" devices anytime soon, not least because they will sometimes be offline. Even Google is now offering software that allows its applications to be used off the internet.

The problem is that, so far, Microsoft does not have much to show for its plans, says Brent Thill, director of software research at Citi Investment Research. Take Windows Live, a collection of online services that in 2006 Mr Ozzie called the "hub to bring it all together". Many of Windows Live's services are derivative and few have a lot of users. Recently, Microsoft said that it will shut down some services, including Windows Live Expo, a listing service for classified advertisements.

Worse, Microsoft has not got much to show for its huge investments in online search, the killer application in Google's cloud. The firm's market share in search is only 8.5% in America, compared with Google's share of more than 60%. As a result, Microsoft's online-advertisement platform has not succeeded either. That matters, because even if companies pay for their cloud services, most consumer services will be funded by advertising. This explains why Steve Ballmer, Microsoft's boss, was prepared to pay \$47.5 billion for Yahoo! The online giant would have been an "accelerator" in its quest to catch up with Google in search and advertising.

But those setbacks should not obscure that Microsoft has a plan-and is willing to put a lot of money behind it. It is spending billions to build a network of data centres, a huge infrastructure to cope with the expected demand for all its software-plus-services business. The company does not disclose how many computers now populate its server farms. It says only that it is adding 10,000 servers a month, which is roughly the total number used by a company like Facebook.

What is more, Microsoft has already spent the past couple of years writing software for its new platform. In April Mr Ozzie presented a first chunk, called "Live Mesh"-in his words, the "connective tissue that brings together devices in the cloud." It will enable users to synchronise files on lots of computers as well as to a web desktop in the cloud, for instance.



as checking a user's identity, tracking his location and processing payments.

The club in the cloud

As with all big ideas emanating from Redmond, Mr Ozzie's vision has provoked strong reactions. Here we go again, says one side, who think they have spotted a monopolist's latest plan for world domination. Welcome to the club, comes the retort from the other. Google, Facebook, Salesforce.com and others are already building similar platforms-Microsoft is just a Johnny-come-lately hedging its bets.

Needless to say, things are a bit more complicated. Mr Ozzie's plans amount to more than a dominant software company trying to protect its franchise. Building a platform for the cloud does not seem such

> More will come in the autumn, when Microsoft is likely to publish some new tools for developers.

Microsoft is further along with its new services than most think. Health Vault, launched in October, is not just a place where people can store their medical details online, but a service that can connect to all sorts of monitoring devices, as well as software used by hospitals and doctors. Microsoft is likely to come up with combinations of consumer and institutional data in other areas, such as education. It hopes they will become the killer apps of the new platform, rather as Word and Excel were for Windows.

Microsoft's familiar products are also being recast for the cloud. Sometimes the change is modest. The latest versions of Office, the software package that includes Word and Excel, enable users to share files and collaborate. Mr Ozzie argues there is no demand for a fully featured web-based version, (though, it has to be said, the old desktop-bound Office is one of Microsoft's biggest money-makers and one of the main reasons for people to use Windows). Other overhauls are more ambitious. Customers will soon have the choice of running Microsoft's business programs, such as its mail-server software, Exchange, on their own computers or in the cloud. Chris Capossela, who oversees this shift at Microsoft, expects half of the mailboxes managed by Exchange to be online.

This flurry of activity in Redmond does not guarantee Microsoft success in the cloud. Top of the list of Redmond watchers' worries is the firm's culture and management. MaryJo Foley, a long-time Microsoft correspondent, thinks it will lose something vital when Mr Gates walks out of the door. She concludes in her recently published book "Microsoft 2.0" that if "Microsoft were still the company it was ten or 20 years ago, with the simultaneously ruthless and cautious Gates at the helm," she would have "no qualms" about predicting its success.

The firm has become bloated, insiders say. "It's a huge problem. Microsoft has so much raw potential, but it needs extreme leadership to break out of the bureaucratic morass it encumbered itself with," says the book's foreword, written by "Mini-Microsoft", an anonymous blogger-cum-employee who is required reading for Microsoft watchers.

If Microsoft has made one excellent hire in recent years, it is Mr Ozzie. Although he is unlikely to become a public figure in the mould of Mr Gates, he is more in tune with a style of computing in which everything is connected. He understands that a take-no-prisoners attitude will get you only so far. Mr Ozzie is also level-headed, hands-on and a brilliant technologist. He himself wrote much of Lotus Notes, an early collaborative program, and came to

Microsoft when it bought his latest start-up, Groove Networks, in 2005.

Yet some think Microsoft needs more fresh blood in its upper echelons. Although some veterans have recently left and some new executives have been hired, many senior positions are still filled by people who have been with the company for more than a decade, says Michael Cusumano, a professor at the MIT's Sloan School of Management and the author of a book on the inner workings of Microsoft. Can a veteran leadership team, he asks, foresee how the software business will change? And can it attract a new generation of employees to the company?

Billet doux

Microsoft is no longer the chosen workplace for many young geeks. Second-generation internet firms, such as Google and Facebook, have more "mind share". The same is true for investors and users, which is partly why Microsoft will launch a \$300m rebranding campaign later this year. To make Microsoft hip again, the firm has hired one of America's coolest advertising agencies, Crispin Porter+Boguski.

Microsoft's image is still tarnished by the antitrust saga of a decade ago, when it was judged to have abused its Windows monopoly. That would prove a more serious stain if it stops consumers from trusting the firm with their personal data, a necessary part of many cloud services. After similar antitrust woes, IBM took decades to shed its reputation for being overbearing and arrogant. It managed partly by becoming a champion of industry standards and open-source software.

Microsoft is treading a similar path. The firm has already changed—whether the American and the European antitrust actions have tamed it, or customers want different behaviour, or Microsoft has just grown up. It has become more open-it no longer wants to lock the world into its own proprietary technology. "We have matured a lot," says Mr Mundie, who spearheaded this opening-up.

Microsoft has indeed done many things that would not have seemed possible a few years ago. It has embraced industry standards, published "interoperability principles" that guide its developers, and released thousands of pages describing how its programs work together, so that rival products can join in. To boot, Microsoft has accepted that open-source software is here to stay. It has adopted some of the techniques of volunteer developers, given them code and even put some open-source code in its programs.

Still, many do not believe in the new Microsoft. When *Information Week*, an American computing magazine, surveyed some 500 technology professionals, more than half said they thought that Microsoft's openness was mostly a publicity

campaign. In a recent speech that was widely interpreted as taking a swipe at Microsoft, Neelie Kroes, the European Union's competition commissioner, said that governments and businesses would do well to use software based on open standards. And Matt Asay, a blogger and executive of Alfresco, an open-source software company, speaks for many in the open-source movement when he says that Microsoft "is the only major software company other than SAP that has not fully engaged with the open-source community."

Microsoft's approach to open source hints that the firm has not yet made up its mind what it wants to be. Even as the company seemed to have made peace with the other camp, signing licensing deals with open-source companies, it accused open-source software fans of violating 235 of its patents and threatened legal action.

The defining test of Microsoft's openness will be whether it tries to use its monopoly on the desktop to gain an unfair advantage in the cloud by tightly integrating—or "bundling"—software and services. Critics say the firm has already tried to favour its online search service in its Windows Vista operating system, but backed off when Google complained. Mr Mundie, however, is eager to offer reassurance: although Microsoft will make its software and services work well together, it will do nothing unlawful, he says: "The company has been quite clear how we are thinking about interoperability."

Microsoft is in transition. "The Road Ahead" will not be as straight or as smooth as it was on the cover of Mr Gates's best-seller, written in 1995. Yet Microsoft is unlikely to hit a wall, as IBM did after Mr Gates steered his own big shift in computing all those years ago—if only because Microsoft has a clearer view of the future. And if the worst happens, watch out for Mr Gates returning to put his creation back in the fast lane. ■



Bye-bye, Bill