The Economist

The house that Jack built

Jack Welch has made General Electric the world's most-admired company. Now GE faces both Mr Welch's retirement and its continuing metamorphosis from an American manufacturer into a global services giant

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"EIN Nod: Bodlonrwydd Llwyr I Gwsmeriaid" is not the snappiest slogan to those who speak no Welsh. Yet the banner inside General Electric's aero-engine servicing department in South Wales—"our goal: total customer satisfaction"—is a fair approximation of what GE has been up to in Nantgarw since it bought the business from British Airways in 1991.

Back then, nearly all the shop's $250m revenues came from the airline. The Welsh are not known for optimism, and many employees thought the plant would eventually close. Yet this year its sales will top $900m, with BA providing less than half the total. Some 98% of its 1,600 workers own shares in GE. And everywhere you can hear the strange sound of Welsh voices talking GE-speak—about "delighting customers" or the plant's 300 green belts and 18 black belts in GE's famous "six sigma" quality programme.

A source of pride for any company, you might think. Yet GE wants more. James Barrett, the British manager who oversaw the takeover, still kicks himself for not introducing GE's systems to Wales sooner. In Cincinnati, where GE's aircraft-engine division is based, managers complain that other plants are further ahead with six sigma.

Such perfectionism stems from Jack Welch, GE's boss since

1981, who has some claim to being the world's most successful manager of the past quarter-century. At first this slight, intense Irish-American earned the moniker "neutron Jack" for the way he laid off 100,000 workers, savagely reorganising a company that most people had assumed was doing well. Since then he has unleashed several widely copied revolutions. GE tops most polls as the world's most-admired company. This year it may become the first firm to rack up net profits of $10 billion.

The train conductor's son from Salem has become the Princess Diana of the business press, his every move recorded in a series of cover stories (one even celebrated the "bold but neat handwriting" on cards he sends employees). Bill Gates may be richer, but despite having founded his own, hugely successful firm, he has not created as much shareholder value as Mr Welch has at GE.

Last year a leftish author called Thomas O'Boyle had a go at dismantling the Welch legend. He revealed that GE has some rough edges: its chemical plants have polluted, its defence arms have been involved in Pentagon scandals, it burns out some managers, it made a mess of running Kidder Peabody, an investment bank. But he failed to carry his central charge—that Mr Welch was the unacceptable face of American capitalism. Rather, it is American firms' Welchian willingness to take hard decisions that has given American business its current pre-eminence.

The measure of Mr Welch's achievement is that the radical messages he began preaching 20 years ago now seem like clichés. Today all the best big companies try to think like small ones. Conference speakers the world over assert that you have to destroy your own business to survive. Even governments accept that it is better to have 300,000 "real" jobs than 500,000 unsupportable ones. Next year, Mr Welch will retire. What is his legacy?

GEneric

Wherever you live, the chances are that today you will meet GE. Whether opening the fridge or turning on the light, taking a train or sitting at your PC, paying with a store charge-card at Harrods or Home Depot you are a GE customer. Viewing "Money Honey" on CNBC or "Friends" on NBC, you are watching more of Mr Welch's troops in action.

If this suggests lack of focus, that is because GE is a genuine conglomerate, or multibusiness, as Mr Welch prefers to call it. It has ten product groups, including one, GE Capital, with 28 business units. This array is not entirely random. GE is in businesses where size matters (it spent $1m a day for four-and-a-half years to design the GE 90 aero-engine). It insists on occupying one of an industry's top two slots or getting out. But although there is more synergy between its parts than one might expect, most have as little in common as the cast of "Friends" and your fridge.

Mr Welch thinks this variety makes GE a good place to work. "If you like business, you will love GE." Before you scoff, consider the list of specialists that GE is currently pulverising —from television (where NBC is pounding Disney's ABC) to power systems (Asea Brown Boveri) to medical equipment (Siemens). In most of its businesses GE is number one, and is not just gaining market share, but expanding the scope of the market. Over half the value of NBC is now in new media, in its cable channels (especially CNBC) and its Internet arm. Half the products and services that its power-systems unit sells did not exist five years ago.

Other conglomerates have been destroyed by specialists in recent years. But GE has outperformed both its rivals and the stockmarket (see chart). Christopher Bartlett of Harvard Business School says that it has overcome the usual objection to a conglomerate, which is that managers cannot allocate

capital better than the market. GE's success is rooted in its movement of ideas and management talent around the group. It not only excels at using knowledge and experience within a business, but also does something the specialist cannot, by transferring it over the whole company.

GE has management expertise in spades. It is one of the first sources for any large firm looking for an outside chief executive. (The most recent hiring was Paolo Fresco, one of Mr Welch's deputies, to run Fiat.) Outsiders are buying not just a set of skills, but an attitude. GE hires a particular type, rejecting Ivy-leaguers for graduates from lesser schools or the armed forces, whom it picks more for their confidence, competitiveness and hard work than their exam results.

The result is, like Mr Welch himself, an odd mixture of machismo and humility. A hockey player, Mr Welch's instinct remains to “check” an opponent. Despite growing numbers of female managers, most of GE remains emphatically male. Soft handshakes are rare; a manager discussing the merger of two competitors can quip “tie two cripples together doesn't mean that they can walk”; those who “don't get it” are forced out.

On the other hand, there are few large firms where people are quicker to admit what they don't know, or where others' ideas are more readily accepted. A London manager in GE Capital recently told Mr Welch how his unit was using young people to teach their bosses about the Internet. Within days, the order went out that every senior manager at GE, from Mr Welch down, should spend a couple of hours a week being bossed around by an “Internet mentor”, usually a generation younger.

Such transfers of knowledge lie at the heart of GE's success. A new flexible-manufacturing technique invented in New Zealand is used in Canada and then America. Under its independently minded boss, Gary Wendt (“the only man to

have shouted back at Mr Welch in public"), GE Capital used to resist this. Mr Wendt rejoiced in his reputation as the main source of GE's growth and profit in the early 1990s. But he left last year; and GE Capital, no longer the company's fastest-growing division, is less independent than it was. Now its managers boast of using "wing to wing" techniques, originally invented by the aircraft-engine division, to streamline the bureaucracy.

Plenty of other firms also claim to share ideas. But at GE the culture is built-in. Pay and promotion, for instance, are tied to "boundaryless behaviour", particularly for the 3,000 managers Mr Welch monitors. Crotonville, GE's training centre, spreads the message. And sharing ideas has also featured in most of Mr Welch's management revolutions. These may look anarchic: change for change's sake. In fact, there have been relatively few campaigns—about one every three years. And they have given GE its own language. People whose businesses have nothing in common (and often speak limited English) suddenly start telling their war stories in the same vernacular.

There is a pattern to the fads. Mr Bartlett points out that since the brutal first five years, when the emphasis was on cost-cutting, Mr Welch has tried to balance rationalisation with revitalisation. Each time he launches a drive such as six sigma, which cut costs by reducing the error rate, he also gives his troops a new goal. At the same time he has balanced "internal" restructurings with "external" culture-changing shocks, such as the 108 acquisitions, worth $21 billion, it made last year. Some on Wall Street even hope that Mr Welch might have time for one more takeover (UPS was a favourite until its decision to go public).

Jack be nimble

Even if he does another deal, Mr Welch's bigger legacy will be

neither that nor his management fads, but in getting GE to confront three big “external” shocks. These are globalisation, the move from manufacturing to services and the Internet.

One of the stranger sights on the streets of Japan is 300 unmanned “automated loan kiosks”. From the outside they look like high-tech public toilets. Anyone with a driving licence can have their credit checked, sign a loan contract and receive cash within half an hour. The kiosks are owned by Lake, one of a score of Asian firms bought by GE Capital in the past two years. In the early 1990s GE went on a buying spree in Europe that eventually proved highly profitable. Now Mr Welch claims to have discovered an even larger “goldmine” in the east. GE's Japanese consumer-loan portfolio yields a 28% annual return; it also thinks it can sell 22 of GE Capital's 28 product lines in Japan. In most cases the sellers agreed to divide portfolios into “good banks” and “bad banks” and took only the former. Much of the money GE owes is sitting in an escrow account: if the assets were to deteriorate, it would get it back.

Soon, half GE's sales and most of its workforce will be outside America. Every new operation goes through “GE-ification”. An acquired firm must follow hard rules, such as supplying financial information (“joining GE is like taking a drink from a fire hose” is one complaint). On the other hand, firms usually keep their names, marketing strategies and, if he co-operates, chief executive. In Cartagena, Spain, GE has just opened a new $600m plastics factory. But the story, says the plant manager, has been “less about building a site than building a culture.”

Four stages in a multinational's life can be identified. The first is corporate colonialism, when companies use foreign outposts to distribute goods made at home. The second integrates manufacturing along global lines. The third uses foreign

subsidiaries for ideas as well as production. The fourth has to do with a state of mind: when firms become "multicultural multinationals" the nationality of staff ceases to matter.

GE is somewhere around stage three. One of Mr Welch's first changes was to put all operating units into global product groups, with regional managers left to co-ordinate such things as acquisitions and local public relations. This global attitude to products is now matched by a global attitude to resources. GE has redoubled attempts to pass business to cheap hands and cheap minds.

If you live in Texas and get a strange voice asking why your credit-card payment is late, it is probably because the call is coming from India (the operators assume western names and reportedly pick up the twang of the region they cover). Ideas whip backwards and forwards. For instance, most new technology for consumer finance still comes from America; but most sales and marketing (like the loan-toilets) come from the rest of the world. The clever bits of GE's new Spanish plastics factory were designed by a multinational team of mainly Japanese and Dutch scientists.

Mr Welch points out that his "boundaryless" company has long since outgrown the idea that "American" is best. "It is a badge of honour to learn something here, no matter where it comes from." Yet for Mr Welch, GE's fundamental values—meritocracy, dignity, simplicity, speed, a hatred of bureaucracy—are universal, not American; and "if some pompous horse's ass wants to behave in such a way that the work experience will not provide those things, then they are out."

Leave aside the possibility that Mr Welch's universalism is perhaps the most American of all values. Certainly his way of proclaiming GE's credo is as American as General Patton. And so, for the moment, is the heart of his company. The headquarters of all GE's product divisions are still run by

Americans in America. With Mr Fresco gone, all his senior lieutenants are American. GE is less global than such European competitors as Asea Brown Boveri.

Yet the same meritocratic values that Mr Welch trumpets are slowly de-Americanising GE. There is a growing layer of non-American managers in their 30s and 40s. Jeff Immelt, boss of GE Medical Systems, may hail from Cincinnati, but ten of his 21 direct subordinates are foreigners (and all but five of the Americans have worked abroad). Of the 23,000 people in its international consumer-finance division, fewer than 200 are American; every national consumer-finance business bar one is run by a local.

This switch will leave an awkward balancing act for Mr Welch's successor. GE needs to join the dots on the map to justify its size and keep the ideas flowing. Yet much of its competitive edge is its Americanness. As Harvard's Michael Porter has argued, globalisation has made national identity more important. If everybody can make the same thing anywhere, a firm's distinguishing mark is often its geography, be it the Californianness of a software maker or the Germanness of a machine-tools firm. An “un-American” GE might be a toothless beast.

Making services

Visitors to GE Medical Systems in Milwaukee would expect to be blitzed with diagrams of new X-ray machines. Instead, the story most told is of a machine that did not work. It was needed to scan an injured child late at night in California. The hospital rang GE's service centre, which routed the call to Paris, where a software engineer fixed things in 30 minutes.

Most people still associate GE with making things. In 1980 manufacturing provided 85% of the group's profits; now three-quarters come from services. Around half that comes

from its two “pure” service arms, GE Capital, which alone provides about 40% of its profits, and NBC. Less noticed is how many “manufacturing” businesses rely on services for their profits and also as a cudgel with which to bludgeon the opposition.

At the beginning of the decade service contracts in GE's medical systems, power-systems, aero-engines and transport divisions were a bonus. The main aim was to sweet-talk the customer into buying new gear. Now GE services not only its own products but also those of rivals (hence the Rolls-Royce aero-engines hanging around the factory in Wales). The aircraft, train and power divisions use the same remote diagnostic technology as medical systems. GE Aircraft Engines' fastest-growing business is in contracts where airlines pay a flat fee for every hour their engine is in the air (in effect, outsourcing the risk for servicing it to GE).

Lengthening the life of your products, let alone those of your competitors, sounds perverse. But it gives GE a bigger and more reliable income stream. For every $1 billion in turbines sold at GE Power Systems, it expects service business with a net present value of $2 billion. The medical business recently won a $1.5 billion contract to look after all the equipment in hospitals owned by HCA/Columbia, America's biggest hospital chain. Nicholas Heymann at Prudential Securities thinks the value of GE's long-term contracts alone justifies its stockmarket premium.

Services have also given GE a way, as one manager puts it, to “bury ourselves so far into the customer that they cannot survive without us.” This is partly because services elide: GE's “on wing” service works better if you also have a long-term maintenance contract. It also turns GE from a supplier into a sort of partner or consultant. Airlines, for instance, may want to extend the time their short-haul aircraft spend in the air

(currently around ten to 12 hours a day). Less time in servicing helps; but so would statistics about how many aircraft are on time. So GE is buying software firms that provide aircraft-management services—or run hospitals, electrical grids and railways.

Behind all this lies a common Welchian theme: to expand the definition of any market you are in. Ricardo Artigas, who runs the long-term service side of GE Power Systems, has stopped thinking that he has a third of the $12 billion market to look after turbines. Now he looks at the $40 billion-90 billion that utilities spend on operating and maintaining their power plants. At GE Medical Systems, Mr Immelt has captured a third of the $20 billion-a-year market for hospital equipment; now his target is the $45 billion market for hospital spending on IT.

Competitors have found it hard to fight back. One consultant who advises Siemens talks about the German firm's fury on discovering that making good scanners is no longer enough. Pratt & Whitney and Rolls-Royce have cried foul about an exclusive deal GE has signed with Boeing to use its GE 90 engine, under which GE assumes a large part of the financial risk. GE will probably soon move into servicing airframes as well as engines (a BA unit that does that sits temptingly near the Welsh plant).

But these relentless invasions pose more questions for Mr Welch's successor. To begin with, competitors such as Siemens, Philips, ABB, Rolls and Pratt are learning to fire back. Also, GE may provide better services than other manufacturers; but, as people at GE Capital and NBC whinge privately, it is still run by engineers whose first love is making, not selling. The more GE expands into services and consultancy, the more it runs into competitors such as Lufthansa, IBM and Electronic Data Services. Above all there is the question of focus. GE's strength may be its ability to

keep ideas swilling around. But at some point a conglomerate that is already hard to manage risks becoming unwieldy.

Without Welch

The conventional answer to GE's internal Y2K problem, “No More Jack” (or “NMJ”), is to point to its depth of management talent. “It has the most powerful bench in the world,” argues Noel Tichy, who has written several books about GE. Mr Welch's working year revolves around personnel. He teaches each month at Crotonville, often staying late into the night drinking with the troops. A fair chunk of April and May is spent going through the annual “Session-C” appraisals of GE's top 3,000 managers. Each January there is an annual meeting of the top 500 managers at Boca Raton in Florida.

As a young man, Mr Welch nearly left GE because everybody got the same $1,000 raise. Now each of GE's 85,000 professionals and managers is graded in an annual process that divides them into five groups: the top 10%, the next 15%, the middle 50%, the next 15% and the bottom 10%. The top tier will get options; nobody in the fourth tier does, and most of the fifth tier will probably be culled. Each unit must segment its managers in this way each year, so that it can't get away with claiming that they are all in the first tier.

Even with such a Praetorian guard, the new emperor will make a huge difference. Mr Welch's cult has depended partly on skilful public relations. But all the speechifying, phrase-making, the appearances at Crotonville and the hundreds of notes he sends each week succeed only because his employees identify with him. Despite his $57m pay last year, Mr Welch still has the common touch. One GE driver sells his GE shares each August because that is when “Jack is on vacation” and things might go wrong.

Mr Welch will probably name his successor early next year.

GE traditionally appoints youngish managers to run the company. Bob Nardelli of Power Systems (who is 41) and, especially, James McNerney at Aircraft Engines (50) are in the running. But the favourite is the 43-year-old Mr Immelt.

A lanky, relaxed figure, Mr Immelt is reputed to be a leader who packages Mr Welch's relentlessness within a kinder, gentler personality that may better suit a services firm. People who fret that GE is close to burn-out say that Mr Immelt has introduced refreshingly wimpy things such as a day-care facility at GE Medical Systems. On the other hand, his division has been tireless. One of his first actions was to push Medical Systems into Germany, Siemens's heartland.

Asked what he has learnt from Mr Welch, Mr Immelt replies that business presents no easy answers, just a succession of sub-optimal solutions that must be worked at, then rethought and worked at again. Despite Medical Systems' success, he has just announced plans to make more machines outside Milwaukee. His first survey shows that 80% of his 20,000 employees understand the strategy and only 20% agree with it, “but I'll persuade them.”

Mr Welch's other putative successors would say the same. It is this relentlessness that makes GE both so successful and so hard to copy. Mr Welch has not proved that conglomerates make sense; merely that his can work. Even if other large diversified companies persuaded staff to share ideas, they would still need to match GE's ability to hire people who sustain its culture. Yet there must remain doubts about the ability of Mr Welch's successor, whether Mr Immelt or anybody else, to sustain the company's performance.

A recent GE recruit is Antonio Espinosa, a young engineer at GE's new plastic plant in Spain. Having come from a leisurely local rival, he moans that GE is always looking for perfection, but he likes the performance pay and training (which has already included visits to America and the Netherlands). Asked

where he wants to be in five years, Mr Espinosa points at the back of the plant manager and says “in his office”. A quarter of a century ago, another young engineer, asked a similar question, cockily replied “chief executive officer of General Electric”. His name was Welch.

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