Netgain

You know you have to

Somewhere in the bowels of your organisation there is almost certainly an old IT system cranking away – one that you have never dared to replace because of what is stored on it. Fear not, says **Antony Adshead**. Updating such a system, with care, is possible

We often hear of the challenges society faces because of an ageing population. A greater proportion of older people means more resources have to be devoted to keeping them healthy, happy and functioning, while all the time the ability of pensions to provide for later life is being stretched.

It's a story that has its parallels in IT. According to a 2005 survey by HAL Knowledge Systems, the average age of applications running core business processes is 15 years old and almost 30 per cent of companies are maintaining software that is 25 years old. And that costs money too. A system that cost £80,000 20 years ago is now likely to cost £150,000 a year to maintain.

HARDER TO ADAPT Oates

Such computing assets are dubbed legacy systems and the received wisdom that IT technology upgrades should take place every three or four years suggests hardware and software that is 15 or 25 years old is only fit for the skip. But if so many people are able to function in business with these systems, should it be the received wisdom that they are binned?

To answer the question we need to ask what legacy systems are – and how you decide whether to stick with what you've got, modernise or throw it out altogether?

Legacy systems are computing assets that are old. And, as with our ageing population, that can often mean expensive maintenance and support – or worse.

"Legacy systems are those that have been developed in old technology which may not be or will shortly not be supported," says David Weaver, managing director of Leeds-based software process specialist Logical Minds. They are likely to be inflexible to new business requirements and incur high costs and risks in support.

"This can happen where a system has been developed over a long period of time by a single developer – the system becomes complex and there is only one developer who can fully maintain it," he says.

But legacy systems contain data that forms a body of unique business knowledge built up by your firm over many years. They may cost a lot to maintain, but the business value they hold could be priceless and, for many, the bottom line is that they work.

But working is one thing. With the pace of business change today, the ability of your organisation to adapt to new business models is at a premium. The internet and high-speed networks have brought a revolution to the way we do business and there are many reasons why you may want to add increased functionality to existing systems.

These include: selling via the internet; giving stock visibility to customers and suppliers; and using client records to sharpen up customer management and marketing.

In some cases the question may be: can we afford not to? But if you don't, maybe the competition will. So says John Oates, a partner in IT services with Baker Tilly, which has offices in Leeds and Hull.

"It is becoming harder to take legacy systems forward with new applications," says Oates. "Bigger companies want those in the mid-market to integrate with their supply chains. Fruit-packing companies, for example, need to give visibility to super-markets but not allow them to see each other's transactions. This kind of thing is very difficult with legacy systems."

Legacy systems developed 20 or more years ago were not intended to link processes and data to the internet – or even to other software – in the flexible way we expect today. Often monolithic in nature, process flows can be rigid and connecting them with modern applications can soak up a lot of costly developer time.

David Cotgreave of KPMG's IT advisory services practice in Leeds says: "The fundamental drivers for systems change are usually due to inflexibility of current applications, which require manual workarounds and duplication of effort – or that the current applications are shortly to become obsolete. In either case, it is unlikely that a business will benefit from further investment in the current solution. A change is likely to be needed."

So, if your IT assets are increasingly resembling an ageing relative – whether well-loved and knowledgable or grumpy and uncommunicative – it's well worth considering your options.

The first of these is whether to outsource the whole process. It is a very common practice and there are plenty of systems integrators and consultants happy to do the job for you. They will be keen to sell you a new software and hardware package – and to do this, they'll have to ensure tricky things like migrating data are dealt with smoothly.

This decision depends on the extent of your resources and whether doing it in-house is a viable option. Whether it is or not, it's worth knowing the processes involved. The key decision is what you should do with ageing systems – reinvigorate them, or rip them out and start again? The decision will boil down to whether you can cost-effectively enhance the existing set-up.

Logical Minds' Weaver says: "The system might be so complex it would be too costly to replace or it may deliver high business benefits to a core part of the business where profitability is not significantly affected. Also, it may be possible to enhance it for changing business requirements.

"You may decide to replace it if support and maintenance costs are too high or there is unacceptable risk in the current system's support. It could also be that the current system has been extended so much it has become unstable, meaning further development could cause it to fail, or the existing system cannot integrate to an acceptable level with other core business systems like accounts or internet-based applications."

If you decide to enhance existing systems there are ways of extracting data from legacy environments and rendering it into more modern formats. The most basic is screen scraping. Screen scraper software connects to the legacy set-up, emulates the keystrokes of a user and converts the output for use in modern browser software.

It's a pretty basic method that leaves underlying information untouched but suffers from not being very scaleable. If all you need to do is get at information in old systems and pass it on in a new format, it may be the solution.

> "People focus on getting data from one place to another but not on its quality. With older legacy applications it is easy for data to be stretched and bastardised over time." **TED FRIEDMAN**

Next is enterprise application integration. This is software that builds new application programming interfaces (APIs) – or the things that connect computer programmes and allow them to communicate – around legacy data.

It doesn't change the underlying data, but allows newer applications to talk to your old ones, and in theory there are few limits on what you can do with that data. Vendors supplying enterprise application integration (EAI) software generally supply large enterprises and have enterprise-scale pricing structures to match.

If you have written off the idea of enhancing existing systems, the alternative is to replace them. In this case, what are the key stages? The first is convincing your financial director you have a sound business case for going ahead.

The chief components of a business case will depend on your firm's particular circumstances and plans, but will boil down to weighing the costs of maintaining existing systems against those of upgrades or replacement.

Alongside this you may want, or indeed be compelled, to develop improved business processes and build in the ability to make changes to them in the future.

At this stage you should be deciding what the business wants to achieve and what are the system requirements needed to get there, says Baker Tilly's Oates. "Do you want business process improvement and integration within your systems or with suppliers and customers, for example? When you are clear on the answers you can draw up a plan to get from where you are now to where you want to be. Then you can weigh your needs against likely costs and your ability to handle the project."

Next comes detailed planning of software installation and migration of data to the new environment.

Ted Friedman, vice president in the Gartner Research data management and integration team, says analysing the quality of data is a critical step that many underestimate. "People focus on getting data from one place to another but not on its quality. There can be lots of issues with it, for example where data has been entered but consistency of format and validity has not been maintained. With older legacy applications it is easy for data to be stretched and bastardised over time," he says.

Migration of data involves extracting it from the old software, transforming it to formats compatible with the new application and loading it. Around 80 to 90 pet cent of this can be automated by migration tools, but even these can fall down depending on the quality of your data. If data quality issues arise there is no alternative but for programmers to deal with them by hand.

How you go live with your new systems is another choice that has to be made and this depends on how long or whether existing data needs to be readily available to the new applications. Options include: converting all data to formats required by the new systems; partial conversion according to particular date or other parameters; and running down the old data and starting afresh.

Like all issues in legacy systems, it's a case of assessing the value of your data and acting appropriately. And like the issue of ageing population, it's something that affects all of us sooner or later