

**IT/eBusiness status and issues of small and
medium sized Irish SMEs.**

**Enterprise Ireland.
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Executive Summary.

Introduction.

This report sets out the findings of study into the IT and eBusiness status of small to medium sized Irish companies. The study examines the IT/eBusiness issues the companies face and makes recommendations on how they should address them.

Being based on day-long discussions, during 2003, between experienced, professional consultants and the senior management of each of 96 companies it gives a unique insight into the realities of the IT situation in those companies and a good indication of the situation in other similar Irish companies.

Summary of Conclusions.

- 47% of the companies visited were classified as being at serious risk due to IT weaknesses. Most of these companies lacked a formal policy in relation to virus protections and other IT management issues. Worryingly, in a quarter of these companies the risk arose from having no, or completely inadequate, virus protection and/or data backup procedures in place.
- In over 75% of the companies IT strategy and IT vendor selection skills were classified as poor or very poor. Technical skills were also generally weak however user skills were regarded as Average to Excellent in the bulk of companies.
- Almost all companies had the opportunity to make IT improvements at little or no cost. The detailed report outlines the most common opportunities in this regard.
- 26% of the companies were running 30% or more of their business processes on bespoke software. The consultants were concerned about the level of bespoke software as off the shelf products can often be a far better option in the longer term.
- 38 % had opportunities to get significant benefits with moderate to high IT investment.
- Only 22% were gaining significant benefits from the use of websites. The consultants felt that many more could gain benefits from their website.
- In 95% of cases, one day with a consultant proved adequate to identify the key IT issues facing the company.

Summary of advice for Companies.

- Take the time and effort to develop a clear strategy for IT investment.
- Put systems in place to ensure the above strategy is implemented.
- Establish a formal IT management policy, covering backups, security, etc.

- If you do not have an IT professional on the payroll, set up a formal technical support relationship with a local company.
- Do not skimp on IT training, but rather develop a structured plan for it.
- Think twice before paying someone to develop bespoke software.
- Think of your website as a vehicle for customer service as well as a potential source of direct revenue.
- Get more value from your web sites by using one or more of the various simple measures listed in the full report.
- Consider using some of the measures listed in the full report, to get much more business benefits from your existing software. Do not go off and buy new software until you have at least considered such measures.
- Consider using an independent consultant when drawing up an IT strategy, IT management policy or planning a major IT investment

Background to Study.

During 2003, Enterprise Ireland commissioned BSM Ltd, a Galway based consultancy company to visit Irish companies for one day each. The consultant's main job was to carry out an IT/eBusiness audit on each of the participants and to offer them advice on how to address the issues identified. As a secondary task the consultancy company, BSM Ltd, was also asked to report to Enterprise Ireland on the IT status of the first batch of companies visited. .

The companies involved were almost all manufacturing or internationally traded service companies with between 10 and 150 employees, who had applied¹ to receive these day-long visits. Participating companies were not charged for the visits, which were supported by the Information Society Fund with the assistance of the Department of Enterprise Trade and Employment.

¹ *Applications for these free one-day visits have now closed and it is unclear whether and when they will reopen. If they are, this will be announced in our fortnightly eBusiness eZine to which you can access from Enterprise Ireland's IT and eBusiness website www.openup.ie.*

Levels of IT Use and Sophistication

From the point of view of software applications, there is a common thread across the vast majority of the companies visited.

The starting point for all companies is a basic accounts package. All of the companies visited use at least a basic off-the-shelf accounts package (typically TAS Books or one of the low-end versions of Sage).

The vast majority (92%) also use off-the-shelf sales order processing and invoicing typically that provided with the accounts package. At this stage of systems development, most companies are using Excel or paper to manage purchasing and receiving, and for manufacturing companies, this extends to costing, stock control, bills of material, materials planning and production planning and control.

The next stage for manufacturing companies, is typically to implement automated stock control, either by extending their accounts package or by using Excel or MS Access. If they use anything other than the accounts package, the first significant integration issues start to arise, as they typically want to be able to allocate stock against sales orders and to reduce stock on dispatch. The greater the level of transactions, the more of an issue this will become.

The next level of sophistication (again for manufacturing companies rather than service companies), is to automate production control and costing. This is usually implemented at first by entering paper-based records into MS Excel or MS Access databases. However, this tends to be very time consuming, which means that in practice there is a significant delay in generating cost or production yield data. Once again, the greater the number of products being dealt with the more of an issue this will become.

It is at this point, that companies begin to consider changing from the basic accounts package that has served the business up to this point, to a more sophisticated ERP system, which will offer the prospect of managing all elements of the business under a single integrated database.

This scenario is illustrated in part by Figure 1, which shows the profile among the companies visited, of off-the-shelf business applications versus bespoke applications versus desktop software applications (mainly MS Excel and MS Access) versus business functions done manually.

It shows that the mix is very similar until companies reach a certain size (in this case 76 employees or more), after which the amount of off-the-shelf software in use begins to climb, while the manual effort correspondingly begins to reduce.

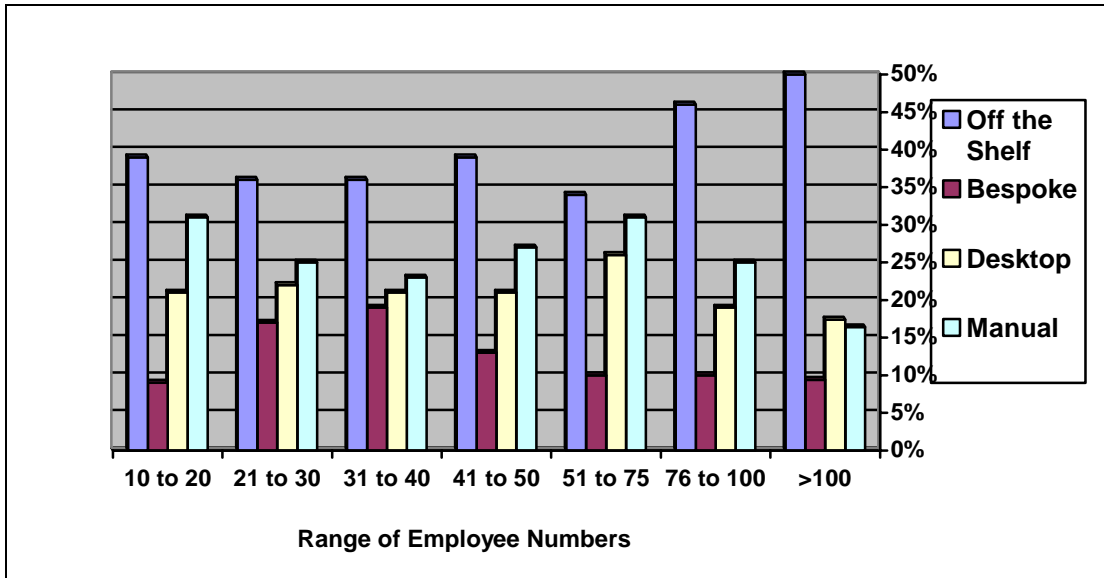


Figure 1: Profile of software applications by company size (based on number of employees)

The overall percentage of business functions supported by bespoke and desktop applications remains broadly similar across all of the companies visited. However, the averages used here hide the fact that a significant proportion of the companies visited rely heavily on bespoke software. 26% of the companies visited run 30% or more of their business applications on bespoke software. The breakdown of this across the profile of companies visited is shown in Figure 2.

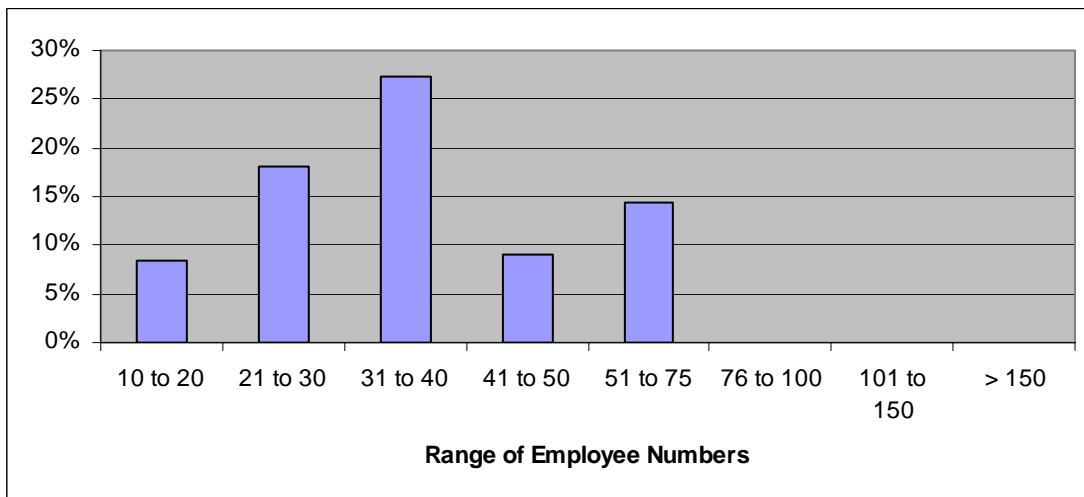


Figure 2: % of the companies visited running 30% or more of their business on bespoke software applications

This shows that the prevalence of bespoke software increases up to a point and then decreases significant thereafter. This reflects the fact, that companies will often start off managing stock, or sales or other parts of the business on simple bespoke applications, but once the business gets to a certain scale, the tendency is to move more towards off-the-shelf software, although 7% of the companies visited have not

followed this route, running 80% or more of their business on bespoke software, which is a highly questionable IT strategy.

From the point of view of web sites, 21% of the companies visited did not have a Web site at all, which is a surprisingly high number, given the simplicity and low cost of creating a basic web presence. As expected, of the companies that did have a web site, 72% have only a brochureware site, with no interactivity, and in many cases, very out-of-date content.

Web site presence or sophistication does not change with company size, based on the profile of the companies visited, as shown in Figure 3.

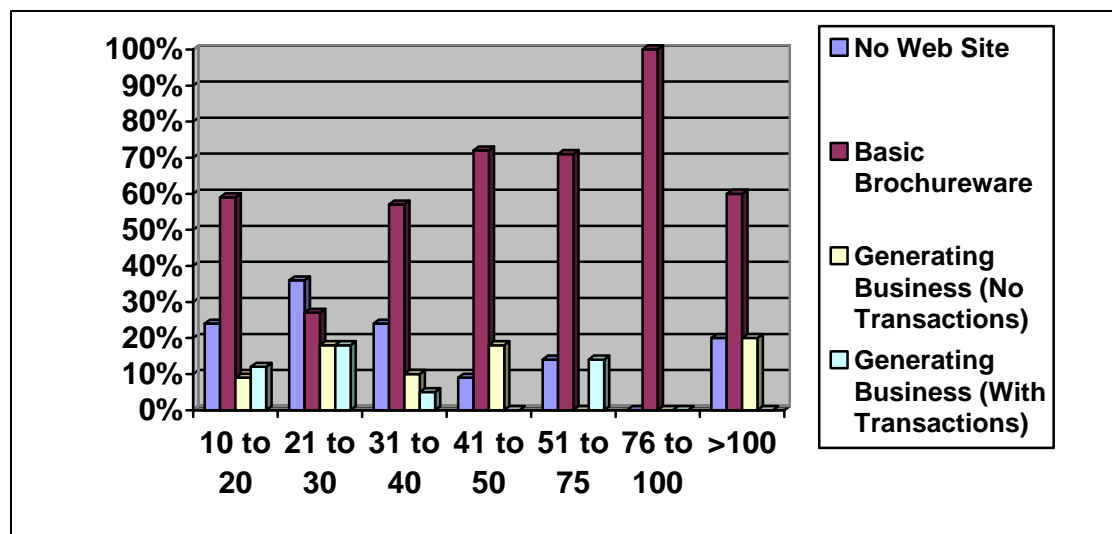


Figure 3: Web site profile by size of company

Not surprisingly, given the number of brochureware sites, only 22% of the companies visited are getting any significant benefit from their sites. There are three main reasons why companies who have web sites perceive they are not getting benefits.

- The sites are out of date and need to be re-freshed (38% of companies).
- The site is up to date but needs to be marketed more and to perform better on the search engines (24% of companies).
- The nature of the business means that it is unlikely to lead to benefits via the web (38% of companies).

The final point is a misperception in most cases, as companies think of benefits only in terms of additional sales. There are many businesses where sales over the web are not a realistic option, but these are still significant opportunities for improved customer service through innovative use of the web.

On a positive note, 12% of the companies visited who have sites are generating some level of business through them, generally via a simple “Contact Us” type channel. 11% of the companies visited have gone further and are actually processing transactions via their site.

Risks and Opportunities

Risks and opportunities for IT investment were summarised under four headings, as shown in Figure 4 below.

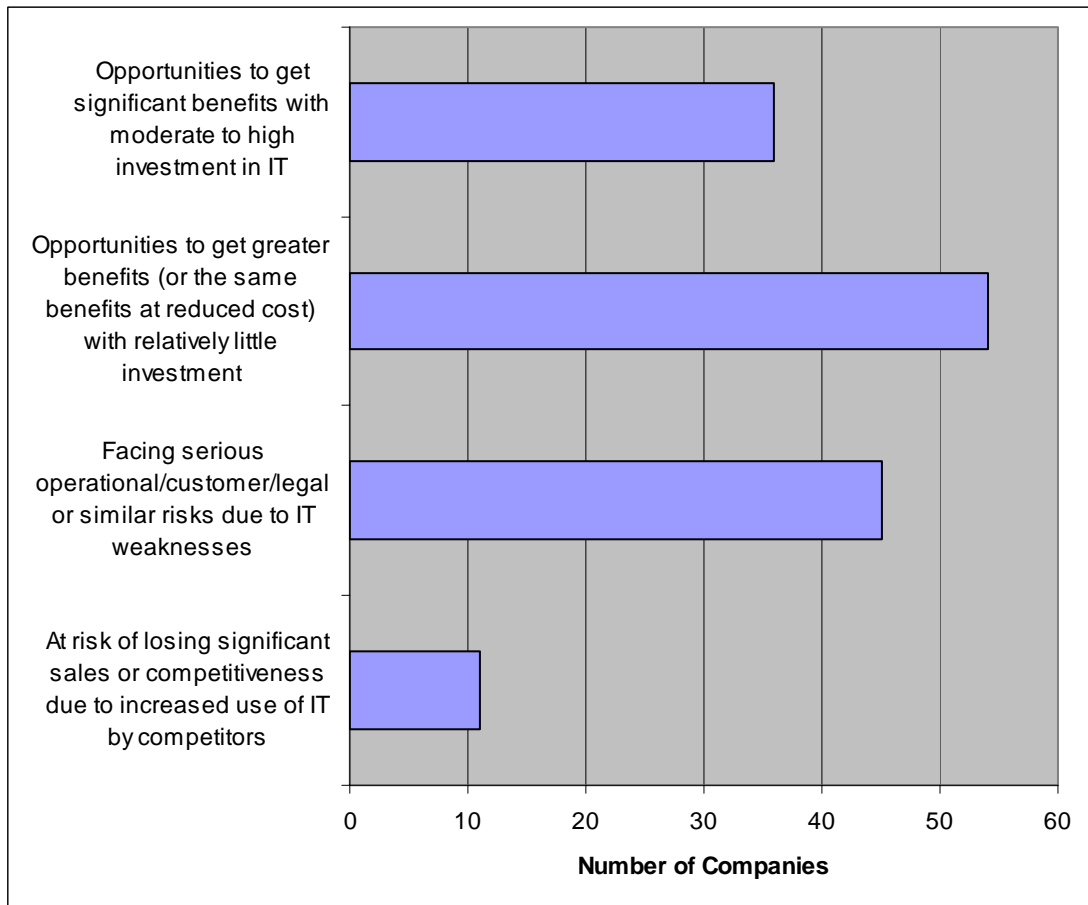


Figure 4: Breakdown of main risk and opportunity categories by company

There were opportunities to make some level of improvement in practically all companies visited at little or no cost, mainly by using software that already existed, either as part of an ERP or accounts package, or through desktop productivity software such as MS Excel or MS Access. The convention used in Figure 4 was to include companies under this improvement category, only if they did not fit under the “Opportunities for significant improvement through moderate to high investment” category.

The following is a breakdown of the most common areas where there was potential to gain benefits at little or no cost in the companies visited (in order of the most common):

- Make more use of the existing accounts package or ERP system functionality.
- Invest in training for key individuals within the company in business management system and/or desktop productivity tools.
- Implement simple reporting tools to extract and format data from business systems.
- Use low-cost contact management software (or MS Exchange if already in place), for basic Customer Relationship Management and diary management.
- Use MS Excel and/or MS Access for recording of basic data, analysis of trends and simple reporting.
- Update web site content so that it is at least up to date.
- Start using e-mail more extensively for internal and external communication.

Figure 5 shows the breakdown of the improvement opportunities identified where moderate to high spend will be required. By far the most common category under this heading is the selection and implementation of a new ERP system, with projects of this nature identified in 15 of the companies visited.

This figure is likely to be even higher, as a significant proportion of the companies where the level of spend depended on the IT strategy, are likely to also decide to replace current systems.

There is not much commonality among the 3 companies in the specific software applications category; the companies involved needed to implement CRM and document management software, estimating software and a RF (radio-frequency) hardware and software application respectively.

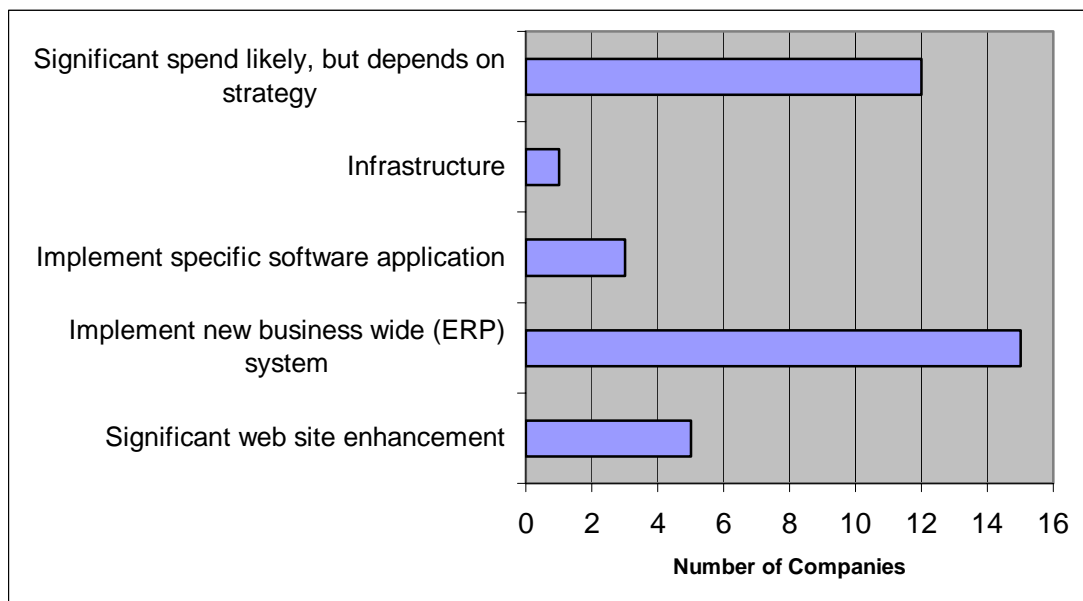


Figure 5: Breakdown of improvement opportunities requiring significant spend

On the risk side, as shown in Figure 4, 45 of the companies visited (47%) were classified as being at significant risk due to deficiencies in IT. Figure 6 shows the nature of the risks identified.

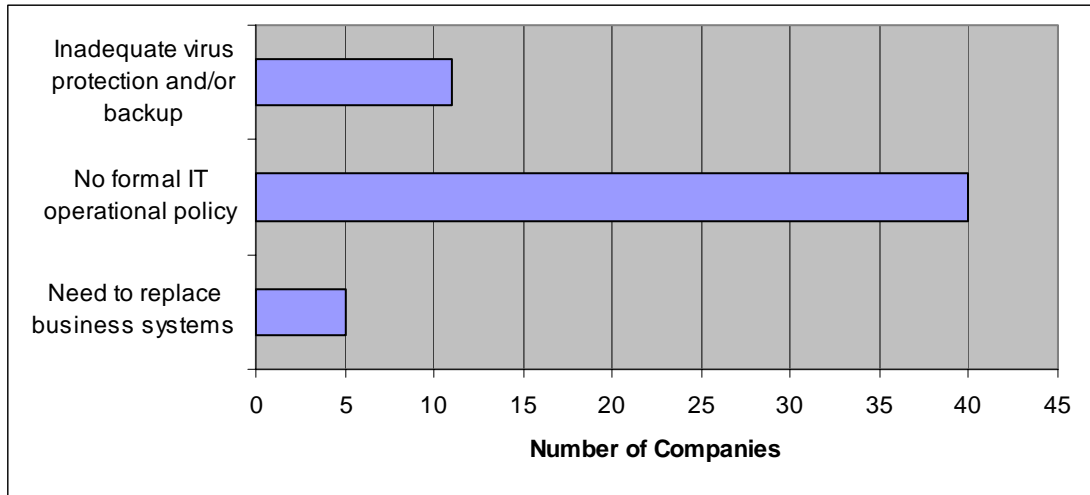


Figure 6: Breakdown of risk categories based on internal IT deficiencies

Forty-five of the companies visited had no formal operational IT policy with regard to backups, virus protection, disaster recovery, software and hardware licensing, upgrades or security. In many cases, some or all of these areas were being addressed, but on an ad-hoc basis.

Interestingly, performance in this area did not improve with company size; as shown in Figure 7, this was an issue for companies across the range of those visited (the zero figures in two of the categories are co-incidental and are caused by the small sample size, rather than any inherent difference in the way IT is managed).

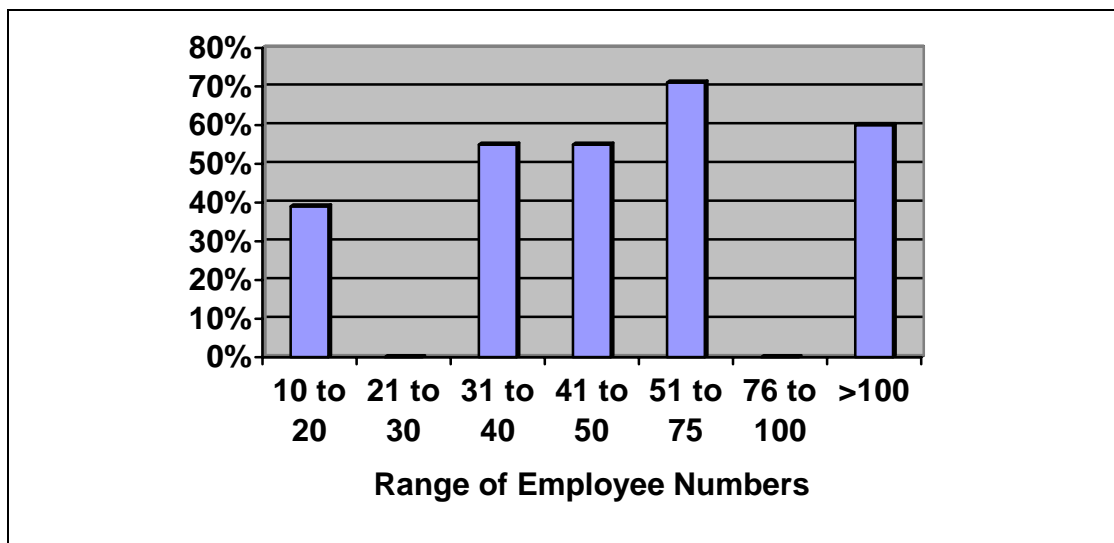


Figure 7: Lack of formal IT policy by company size

Even more worryingly, in 11 of the companies visited there was completely inadequate or no virus protection and/or backup procedures in place.

In five of the companies, the major risk was the continued use of the existing business management system, which typically had support, technology and/or scalability issues.

The second major risk category, as summarised in Figure 4, was the risk of losing competitiveness due to use of IT by competitors. This was identified as a significant risk factor in only 11 of the companies visited. As shown in Figure 8, the risks are split almost equally between the possibility of competitors making better use of the web to provide improved customer service and the possibility of competitors using IT to create greater internal efficiencies, thus reducing costs.

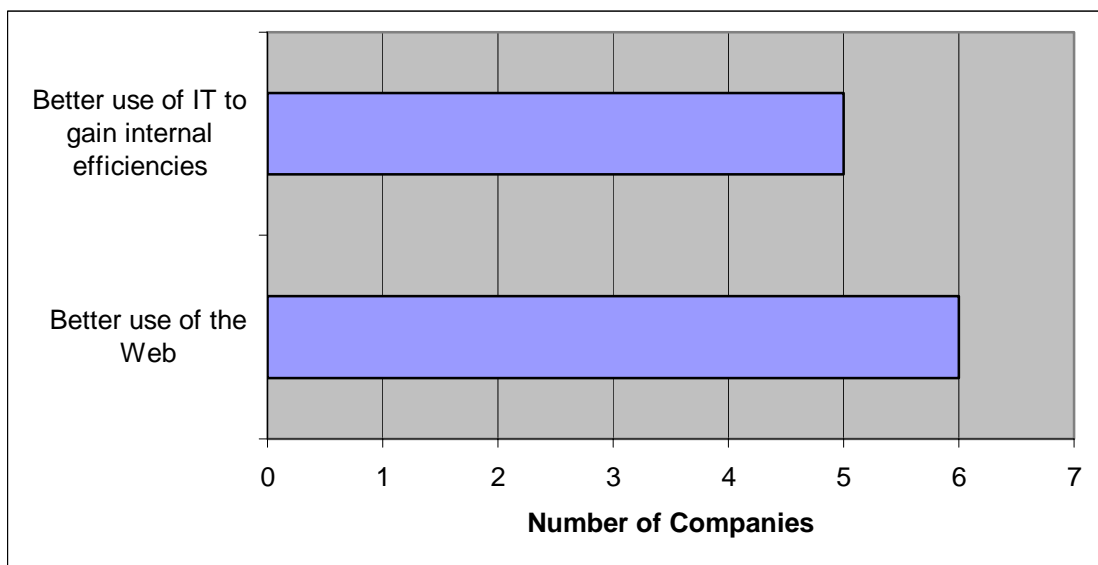


Figure 8: Breakdown of risk of loss of competitiveness due to competitor use of IT

ICT Skills

It was not possible to carry out a detailed assessment of ICT skills within the constraints of a single day on site with each company. However, each consultant made a subjective assessment after each visit under the following categories:

- User skills
- Technical skills
- IT strategy formulation skills
- IT vendor selection skills
- IT function management skills.

The assessment was made in each case, based on the small number of people from the client company who took an active part in the day and to a large extent on general impressions gained from the problems and issues discussed. Consequently, the graphs shown below should not be interpreted too literally and should be used for indicative purposes only.

In ranking each company under each skill category, consultants used a simple subjective scoring mechanism, summarised in Figure 9 into categories of Very Poor, Poor, Average, Good and Excellent.

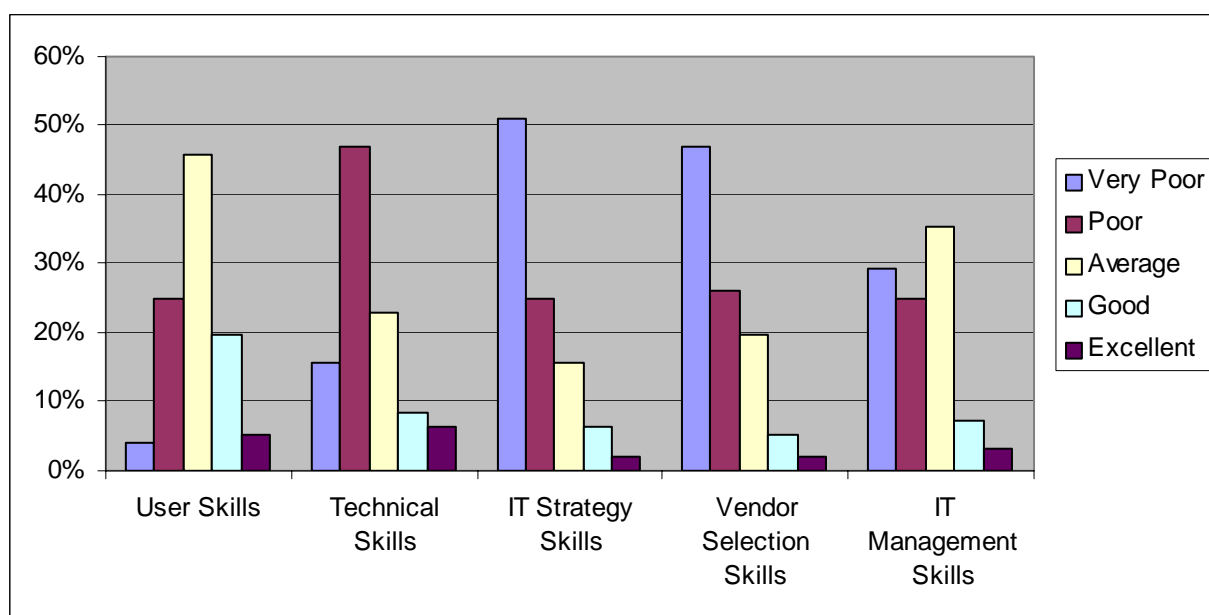


Figure 9: ICT skill categories by % of companies visited

The graph shows that overall, companies score best in the User Skills category, with 71% of companies having average or better user skills. This figure is somewhat higher than expected based on prior experience, and is probably a reflection of the fact that many of the companies visited used only a single simple accounts package and knew

how to use the basic functions of this quite well. It should also be noted that out of the 71%, the majority of companies exhibited only average user skill levels.

As might be expected, technical skill levels are low, with 63% of the companies visited ranking as Poor or Very Poor. One reason for this is that most of the companies involved did not have a professional IT manager or technical resource. Most companies had at least an informal relationship with a local IT services provider, who filled this gap as required.

Predictably, IT strategy formulation skills were generally very low, with 76% of companies visited ranking as Poor or Very Poor in this area. Once again this is partly because of a lack of IT resources, but it also is caused in many cases by companies being of a scale where they have been able to get by to date without addressing this issue formally.

A relatively small amount of external help can contribute to overcoming the disadvantages caused by the lack of IT strategy skills. In almost companies it was possible to get through all of their IT issues during the day. The 9% of companies shown in **Error! Reference source not found.** where this was not possible, includes those where the reason for not getting through the issues was because key personnel were missing. In the case of two companies it was not possible to get through everything because the issues were not fully definable, because the business strategy was unclear.

There were only four companies (4%) where it was not possible to cover all of the issues in the day because of the complexity or number of issues. This is not really surprising given the scale of the companies involved in eBIT, although interestingly, none of the four companies concerned had more than 50 employees, which shows that scale in terms of employee numbers is not always a good arbiter of IT complexity.

Most companies had an awareness prior to the visit, of the major issues identified during the day. In fact, as shown in Figure 10, 18% of the companies knew about all of the issues in advance. (Note: Figure 10 is based the subjective views of the consultants who carried out the visits, and as such should only be used as a indicator of the general trend, rather than a definitive set of data).

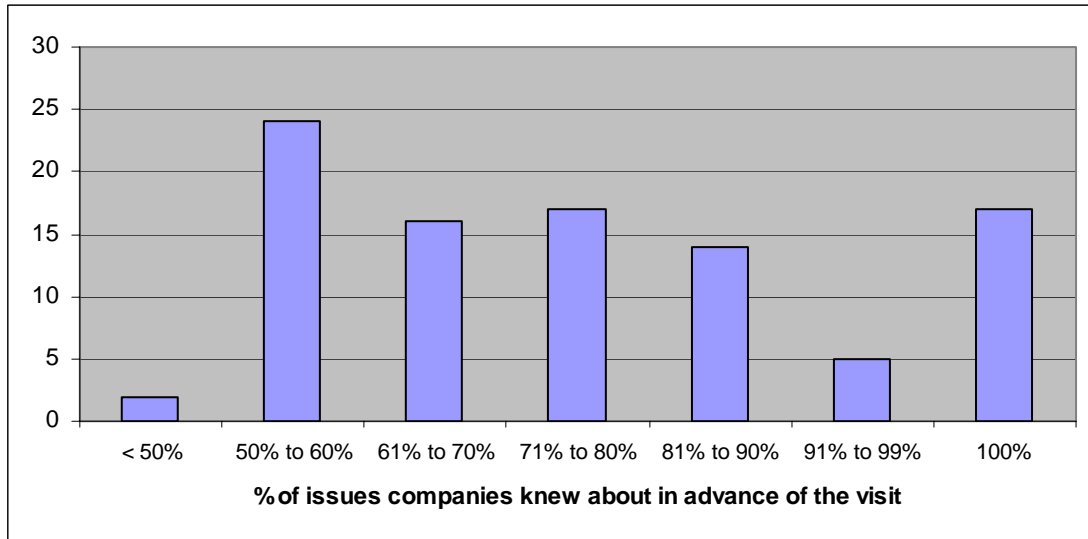


Figure 10 : Number of companies who were aware of the IT issues in advance of the one day visit

For most companies, including those with a high issue awareness, the day tended to clarify the issues and in particular to identify possible solutions. Very often the companies had not thought of all of the particular solutions that were available to deal with a particular issue.

The poor ranking in vendor selection (73% of companies visited ranking as Poor or Very Poor), is driven by the fact that companies tend to feel intimidated when dealing with IT vendors because of a lack of basic knowledge. This is compounded by the fact that selection of IT vendors is an infrequent event for most companies, only arising when significant new spend is required.

Skills in IT function management are split roughly half and half between the Poor and Very Poor (54%) and Average or better (46%). In a majority of the companies visited, there was no IT function as such, and therefore the consultants' assessment was based in many cases on how well the person responsible for looking after IT (generally the senior financial manager or managing director) was doing the job.

Interestingly, there are no strong trends or differentiation of skill level across companies of different sizes, as shown in Figure 11. This graph was compiled by summarising skills across each of the above categories and computing an overall skill level, once again broken into categories of Very Poor to Excellent.

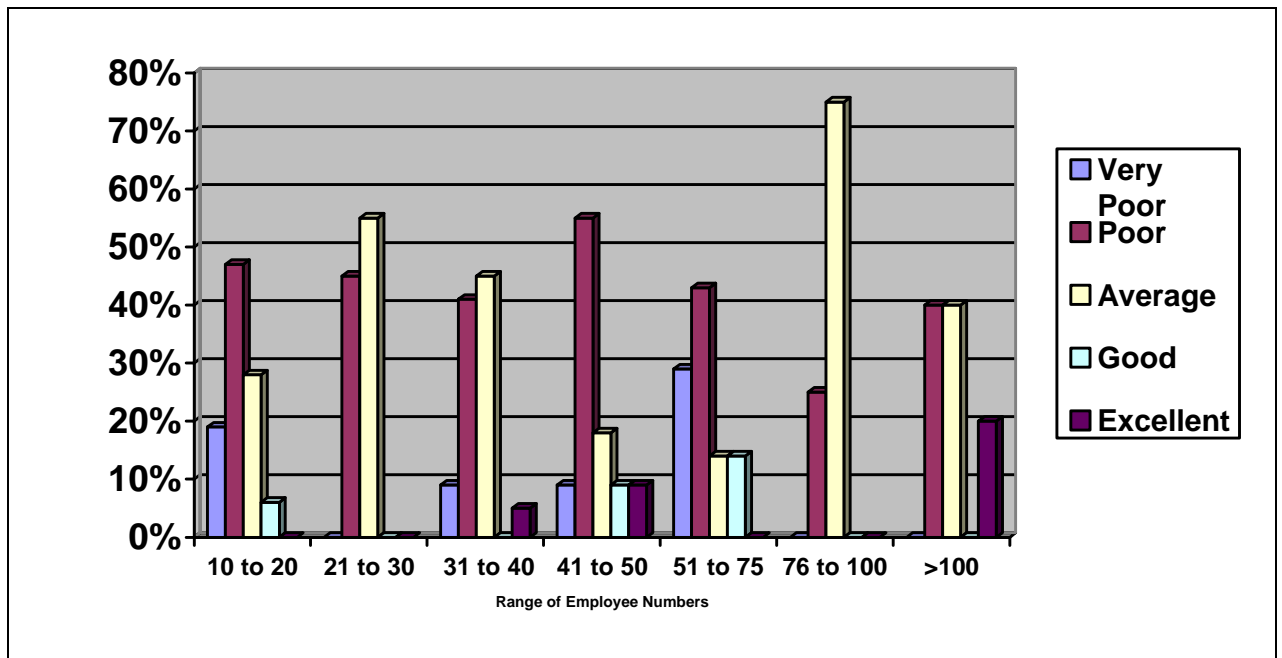


Figure 11: Total IT skill levels by company size

While the graph does show that no companies with 76 employees or more have a ranking of Very Poor, the very small sample size of companies of this size who were visited makes it dangerous to extrapolate any firm conclusions from this.

In addressing skill levels under the various categories, companies should consider the following points:

- Improving user skills will bring the greatest short-term benefit in terms of efficiency and better use of time. This is also the one area where all employees who interact with IT systems can benefit. At a minimum, training should be provided on the business management system (focused on the parts that each user needs to know) and MS Excel for staff who could use this.
- Training in technical skills is not required for everyone in the company. Ideally, if there is not an IT manager, someone should attend at least a basic training course in systems administration. This is the case even if an external company provides technical support, since it will often be easier and necessary to deal with basic issues there and then, rather than wait for someone to arrive physically or to dial in to fix a problem.
- Training in IT strategy formulation is difficult to find, and is largely a matter of experience allied to a decent technical knowledge. If companies do not have a senior manager with this level of experience, they should use a consultant with a proven track record to formulate the strategy. A senior manager (usually the senior finance manager), should shadow the consultant as much as possible and use the exercise as a means of gaining experience, so that the reliance on external assistance in future can be minimised.
- As with IT strategy, training in IT vendor selection is difficult to find and again is largely a matter of experience and of knowledge of the market. For small investment decisions, companies should demand that prospective vendors explain the features, benefits and costs in non-technical terms so that

offerings can be easily compared. For large investment decisions, the company should always use an external consultant, who is independent (i.e. not connected in any way to a vendor of the systems being reviewed), and has a proven track record and knowledge of the market.

- Management of the IT function should be no different to managing other functions within the business, once clear policies and objectives have been defined, which should happen a part of the IT strategy formulation process. Companies with no internal IT resource should consider formally outsourcing the management of IT infrastructure to solution providers. This should include the development of a Service Level Agreement (SLA), which sets out in detail the scope and level of support required.

The Appendix contains a fictitious example that may serve to illustrate the level of user and technical training that may be required in a typical company.

Key ICT Messages for the State Development Agencies

When discussing technology issues with companies similar to those visited as part of the eBIT programme, the State Development Agencies should concentrate on the following messages.

- Ensure that there is a formal IT management policy in place, covering backups, system security, virus protection, software and hardware licensing and disaster recovery. This should cover not only the physical operation of putting these in place, but also formal procedures for their on-going maintenance. Companies without an IT manager are unlikely to have the technical skills to formulate such a policy and if not, they should use an external consultant or specialist IT services company to do so.
- Companies without an IT professional on their payroll, should set up a formal relationship with a local company to support their IT infrastructure. Many small companies decide not to do this, and then complain that the local companies who do offer such services, are slow to provide support and have no interest in learning about their systems. A small monthly fee, in tandem with a simple Service Level Agreement, will ensure prompt service in the event of a problem and also provide a regular audit of systems that will identify and resolve problems before they become an issue. Using a local service provider will generally help in terms of response time and local companies are also more likely to be flexible with regard to working hours if this is necessary.
- Companies should develop a structured plan for IT training, make someone on the management team responsible for implementing it and budget accordingly. Many companies pay lip-service to the idea of IT training, without actually going ahead and doing it. By including it in the budget and giving formal responsibility to a senior manager for seeing that it is done, there is a much greater likelihood it will be carried out. While it is often difficult to calculate it in tangible terms, training will generally offer strong paybacks in terms of greater productivity and more effective use of people's time.
- Companies should think twice before paying someone to develop a bespoke software application. It can seem attractive because of the apparently low cost, particularly if it is done on a part-time basis or by a student on placement, and for some types of software applications with very well defined boundaries this can indeed be a reasonable option. However, each time such a system is developed it must go through the bug-fix-bug cycle common to all software development. Usually such systems end up as "islands of automation" or they evolve over time, to the point that they become an essential part of the business but are difficult to maintain or to integrate with. There are a huge range of off-the-shelf software applications available, many at relatively modest cost. If one adds up the full cost of ownership of bespoke software over its entire life-cycle, it is often far higher than an off-the-shelf equivalent.
- Companies should get more value from their web sites, from the very simple things like ensuring that content is up to date and that the web address is

included on all company stationery, to improving site performance on the main search engines through judicious use of keywords and links. They should also think of their site as a vehicle for customer service as well as a potential source of direct revenue.

- If a company believes that they are lacking software to carry out important functions, they should look first in their existing software packages. Many companies use only a fraction of the functionality they have paid for in business applications. Alternatively, companies are often a number of versions behind the current version of the software they are using, primarily because they have opted not to pay for support. Using existing software, even where this involves an upgrade to the current version, usually has significant advantages in terms of cost, ease of training and integration.

The State Development agencies should be promoting the following messages with regard to IT in their contact with SMEs:

1. Take the time and effort to develop a clear strategy for IT investment. If necessary, use an external consultant to facilitate this. The time and cost involved will be paid back many times over by avoiding spend on the wrong areas and managing spend where it is needed.
2. Once the strategy has been formulated, make sure that the projects identified are implemented by including a review of progress against plan in the monthly management meeting. Use this forum to review the relevance of the plan and to add new items to it as necessary.
3. If a company believes that a major investment is required in IT, use an **independent** external consultant, with a strong track record in the area, to facilitate the selection process. Most companies that try to do this on their own will make a sub-optimal choice and/or spend more than they need to.
4. If companies are having difficulty getting reports from their business management systems, try and use 3rd party reporting tools. There are a number of these on the market, they can be implemented at relatively little cost and will usually transform reporting in a short period of time.
5. Don't skimp on training in IT!

Appendix. 1. Sample training needs.

The following fictitious example may serve to illustrate the level of user and technical training that may be required in a typical company.

A 50 person manufacturing company has the following organisational structure:

- Managing Director*
- Finance Director*
 - 3 admin staff*
- Operations Director*
 - 2 shop floor supervisors*
 - 1 materials manager*
 - 2 stock room staff
 - 1 dispatch and customer service manager*
 - 1 stock room manager
 - 1 forklift driver
 - 1 engineering manager*
 - 1 product engineer*
 - 32 manufacturing operatives
- Sales Director*
 - 3 sales executives*

The company uses a basic ERP system, with 16 users, as indicated by the individuals with the * against their names. A comprehensive training schedule designed to improve the IT skill levels of this company is shown in Table 1 overleaf.

Training	Who	Training Days Required
ERP system	All office staff who use system on a day-to-day basis 3 admin staff 1 finance director 1 materials manager 1 dispatch and customer service manager 1 engineering manager 1 product engineer 1 operations director Total 9 people	1 day of customised, on-site training per person, delivered 0.5 of a day per person at a time Total 9 days
User training in report generation software (either ERP system or specialised reporting software)	1 sales director 3 sales executives 1 managing director 1 operations director 1 finance director Total 7 people	0.5 days per person, on site training, sales executives to take place together, directors one on one Total 2.5 days
Technical training in report generation software	1 materials manager Total 1 person	3 days off-site training 1 day on site with ERP vendor Total 4 days
MS Excel training	1 finance director 1 materials manager 1 dispatch and customer service manager 1 operations director Total 4 people	1-2 days off-site training course as a group Total 2 days maximum
MS Access training	1 engineering manager Total 1 person	2 days off-site training Total 2 days
Basic NT Systems Administration	1 admin person Total 1 person	3 days off-site training Total 1 person

Table 1 : Illustrative training schedule from fictitious 50 person company

Appendix 2 Size and location of participants.

The tables below show the counties where the participants were based and the employment and, where companies were willing to divulge this, the turnover of the participants.

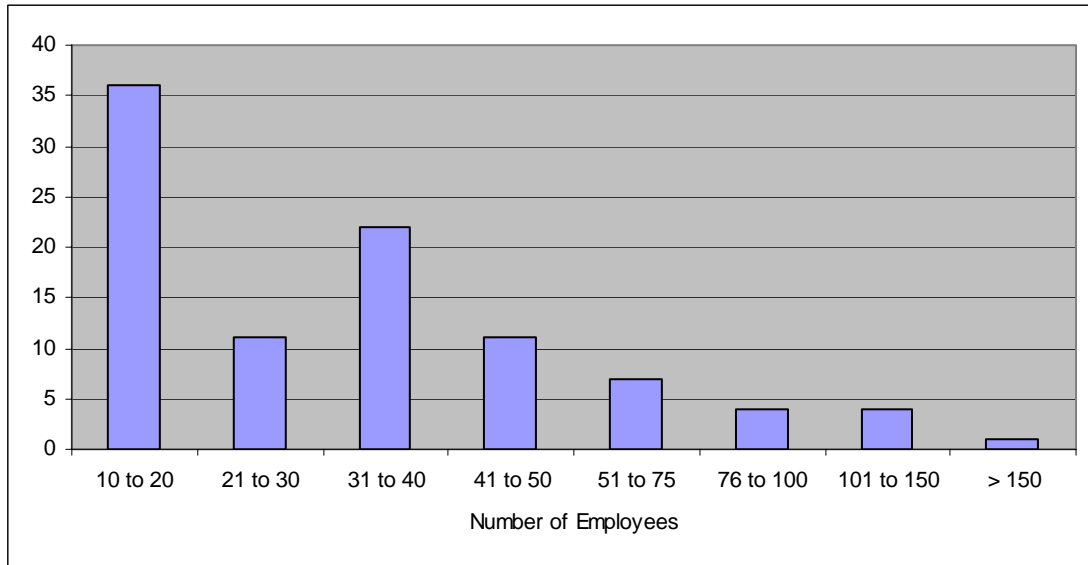


Figure 12: Distribution of companies visited by number of employees

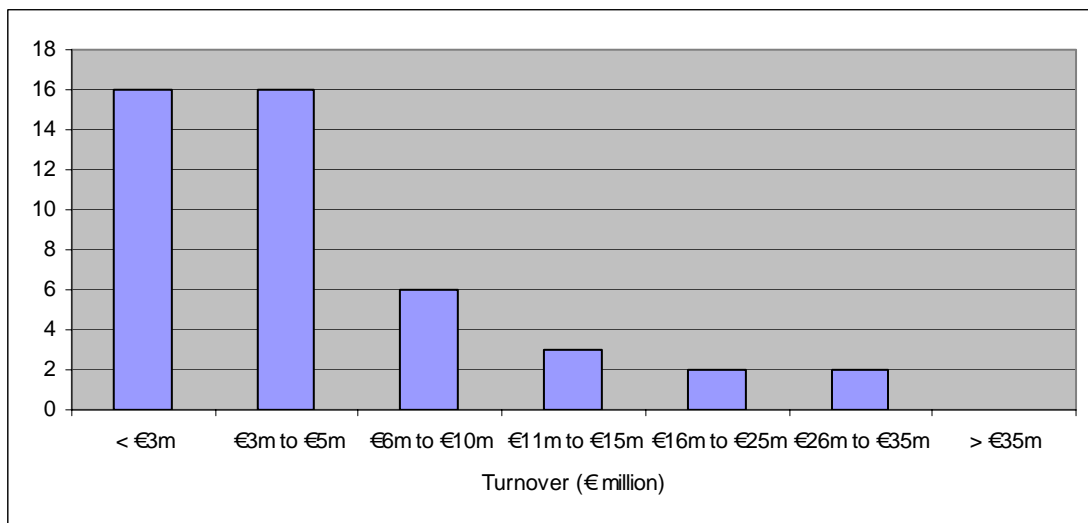


Figure 13: Distribution of companies visited, who disclosed turnover, by turnover

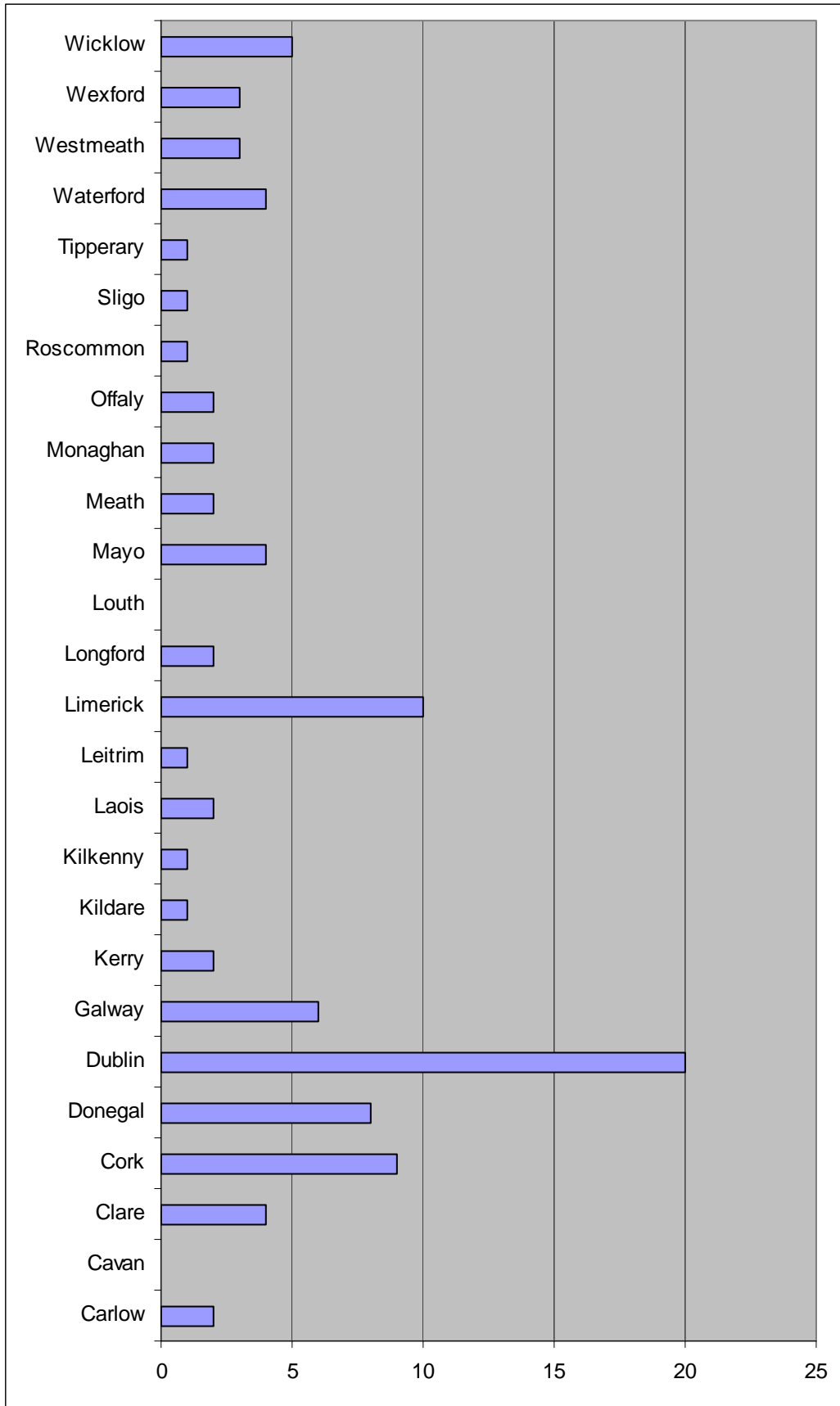


Figure 14 : Distribution of companies visited by county