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**E-LEARNING IN A LARGE ORGANISATION**

**(Factors that Impact on the Pace  
and Success of Implementation)**

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**DESK  
RESERVE 1**

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# E-LEARNING IN A LARGE ORGANISATION

## (Factors that Impact on the Pace and Success of Implementation)

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### 0. Abstract

This dissertation is concerned with the application of e-Learning in organisations, and specifically in Electricity Supply Board Ireland. (ESB). The author traces the impact of technology and particularly information technology on organisations and points out that newer technologies have become mass media, at ever increasing rates. Internet technology has grown from being unknown of to being pervasive in less than ten years.

The internet brought a range of new possibilities for organisations for managing their relationship with customers, and with other organisations, and with their employees. With the internet also came an enormous increase in the range of information available to individuals, and also the possibility of making an individual information source available to hundreds of millions of people in a very short timeframe. These features in turn gave rise to the emergence of what has become known as e-Learning.

The author goes on to review definitions of e-Learning, its benefits, its fit with learning theories, and examines recent statistics for UK and Ireland. This review on the one hand confirms that e-Learning has enormous potential to organisations, and on the other hand shows that the use of e-Learning by organisations is expanding rapidly.

ESB, has taken initiatives in the field of e-Learning, including implementing a pilot e-Learning course for the European Computer Driving Licence (ECDL), for a number of staff. The author used this pilot as a case study to examine the issues around implementation of e-Learning, and from this has drawn some general conclusions regarding factors which are important to the future implementation of e-Learning in ESB. While the conclusions are drawn with specific reference to ESB, they will probably have some relevance to other organisations with similar type profiles.

## 1. Introduction

### **Purpose of the Dissertation**

The world of learning is changing and learning is changing the world. Learning via technology, e-Learning, is now a global phenomenon and increasingly central to business success. e-Learning is the use of the latest electronic multimedia technology to deliver education, information, skills, knowledge using CD-ROMs, the Internet, company intranets, extranets, and other innovative technology based systems.

The need to educate workers in an efficient and effective way has become critical to organisational survival. The importance of offering ongoing education and training programmes is evident because it ensures a higher rate of employee retention as well as the benefits of a highly-skilled workforce. The Training of staff is no longer seen as an extravagance after a good year of profits but as a necessity in order to keep up with competitors.

Traditional training methods such as classroom, computer based training (CBT), job shadowing, workshops etc. are no longer, on their own, sufficient to meet training demands placed on today's workforce. Using Information Technology (IT), organisations can provide today's learning tools to meet today's business challenges. e-Learning promises to change the way we do business in the future, because it makes information available twenty four hours a day, three hundred and sixty five days a year and allows employees to take only the information they require, in any style appropriate to their needs, at a time and place convenient to their work demands.

Despite having a workforce of just under 8,000, and having a culture which is quick to adopt new technologies, ESB has to date made relatively limited use of e-learning. The author is interested in gaining an understanding of general trends in use of e-learning in business, and specifically of the factors which are impacting on the use of e-Learning in ESB. It is intended that the information gleaned from the study will enable conclusions to be drawn regarding where e-Learning could most beneficially be used in ESB to provide training solutions and also provide insights into how e-Learning can best be promoted to management and staff within the company. It is also hoped that the conclusions drawn may have some general applicability in other companies.

## 2. Literature Review

### **What is e-Learning ?**

The main difficulty in attempting to define e-Learning is that it is relatively new and still evolving. A standard way of writing 'e-Learning' has not yet been established. It is still written in different ways: "elearning, e-Learning, ELearning, E-Learning".

*“e-learning (electronic learning) refers to training, education, coaching, and information that is delivered digitally. e-Learning may be synchronous, meaning that learners and instructors are interacting in real time or not, in which case the term asynchronous applies. e-Learning is normally delivered through a network via the Internet, but it may also be delivered by CD-ROM, satellite, and even supported by the telephone.”* (Broadbent Brooke, 2002, p.9).

The true power of e-Learning is likely to be found in its potential to provide the right information to the right people at the right times and places.

### **Benefits of e-Learning**

e-Learning is being presented in the marketplace as the next evolution of the training and education industry and the next phase in the digital revolution. Having established what the literature has to say about what is meant by the term e-Learning, it is appropriate to identify the benefits of using e-Learning to companies and employees:

- Widely Availability and Accessibility
- Convenience
- Improved Retention
- Instant Feedback
- Accommodation of Different Learning Styles
- Hands on Training
- Collaboration
- Standardised Course Delivery
- Currency
- Information Resource
- Learner Control
- Learner Ownership
- Multimedia Formats
- Lower Costs

### **United Kingdom (UK) and Irish Trends in Use of e-Learning**

The most relevant research for both the UK and Ireland is that carried out by the Chartered Institute of Personnel and Development (CIPD). They conduct regular research to identify changing approaches to training and to monitor training priorities as seen by companies. Unfortunately research relating to Ireland is only available for the year 2001, and does not provide data on historical trends. However, UK research has been ongoing for a number of years, so it is possible to analyse trends for the UK. We have also been able to draw comparison between UK and Irish figures, which enable conclusions about Irish trends to be drawn with a good degree of confidence. The UK research, based on two different surveys is used below to draw conclusions in relation to trends in using e-Learning. The results of the Irish 2001 survey are then examined and compared with the UK findings.

## **United Kingdom April 2003 Survey**

For this survey, a sample of 2,000 training managers was randomly selected from the CIPD's member database. A telephone survey was carried out in November 2001. This survey used a structured interview covering annual benchmark questions such as training in the current economic climate, evaluation practices in training and learning, line management support for training, the business case for training, training trends past, present and future. 584 training managers responded to the survey. One of the tables produced as part of the survey identifies the level of usage of different training methods. It is evident from the figures that traditional training approaches are still far more widely used than e-learning approaches. However, of particular interest in this study, is the changing level of usage of IT and particularly Web technologies. In this connection, some key figures are:

Intranet percentage use - increase from 25.5% to 52.2%

Extranet percentage use - increase from 9.8% to 21.6%

Internet percentage use - increase from 26.4% to 47.7%

The order of these increases is dramatic, and reflects a rate of change which could perhaps be described as revolutionary. A continuance of the trend would suggest that e-learning will quickly become a training tool in the vast majority of companies over the next few years.

## **United Kingdom April 2002 Survey of e-Learning**

A telephone survey was carried out by the CIPD in November 2001. Each interview lasting about 15 minutes, with around 31 questions being asked. Of the 502 respondents, only 153(30%) of cases had e-Learning in their training activity. Relevant data from this study is summarised in tables 2, and 3, hereunder:

Key findings are:

- Less than a third of respondents use e-Learning for any group of employees.
- There was a very low level of e-Learning among manual staff.
- e-Learning is used more for IT Training and other technical training, than for soft-skills training.

Other reported findings were:

- Almost half of respondents using e-Learning thought it was unsuitable for training in soft skills.
- The majority of organisations using e-Learning spend less than 10 per cent of their training budgets on it. Most training managers using e-Learning think it is more effective when combined with other forms of learning such as classroom, workshop etc.

## **CIPD Ireland 2001 National Survey**

The study sample was derived from the Business and Finance Top 1000 list of trading and non-trading establishments in Ireland. A structured questionnaire was addressed to HR training managers or equivalent in each organisation. The total number of responses was 221. This represents a response rate of 36.5% which is satisfactory for analysis and the generalisability of the results.

The research carried out by the CIPD National Survey 2001 suggests that investment in training and development is internationally recognised as a precondition to enhanced productivity, the capacity to cope with international competitiveness and survive in an ever-changing business environment. The research data reveals that training is driven by management in order to meet organisational priorities. The most frequently used methods to identify training and development needs include the performance appraisal system, line management requests, employee requests and training and development audits. The results show a similar pattern to the UK results. They do seem to indicate a quicker take up in e-Learning in Ireland:

	Irish usage percentage 2001	UK percentage usage 2003
Intranet	58%	52.2%
Extranet	34%	21.6%
Internet	57%	47.7%

It is not clear whether this seemingly quicker uptake of e-Learning in Ireland reflects a more open attitude in Irish companies to e-Learning possibilities, or simply that there are more technology companies (who are quicker to make use of e-Learning) in the Irish sample.

### **3. Methodology**

For the purposes of this research project, with its emphasis on processes and relationships, the author felt that a mixture of quantitative and qualitative research was most appropriate. In deciding on the most appropriate qualitative approach the author was influenced by the writings of Yin (1989), Bell (1987), Schramm (1971) and Bassey (1981), in her decision to select the case study as the most appropriate qualitative approach.

#### **The e-Learning Pilot Course**

A group of ESB's employees took part in a pilot e-learning course, leading to certification. For the purposes of this study all participants were subsequently interviewed and information regarding their experience on the course was gathered through the completion of a questionnaire. A copy of the questionnaire is presented in appendix 1. The design of the questionnaire provided a certain amount of pre-coded data. The questions were divided into positive and negative responses with a scale of 1 to 5. The remainder of the questionnaire, included 15

questions, which sought to gain the respondents views and opinions, based on the course regarding:

- The e-learning experience generally
- The examinations
- The support provided
- Relevance to work

Finally, there were a number of open-ended headings for additional comment.

### **The e-Learning Process**

A 2 hour classroom introduction was provided to participants initially. This was dedicated to showing students how to log on to the online module, how to navigate within the course and how to complete online assessments. This course was also used to validate that participants had the basic computer skills required to navigate freely through the e-learning course.

Because the ECDL was not seen as a work related course for the participants, they were to work on their own time. Eight of the participants, had satisfactory computer access out of hours, either through company provided home PC or through one of the company's 20 IT Training centres, which are geographically spread throughout the country. In the other two cases, 'locked-down' company laptops were provided, through which they had access the company's intranet, and exchange, and outlook/e-mail accounts controlled by the Training department. (both had home PC's and were relatively frequent users of e-mail). These individuals were provided with ½ days further training on the procedures around using the laptops, and Microsoft outlook e-mail and folders. The tutor set-up a public folder in outlook to post assignments and interact with students. This allowed the students to post up any questions they might have. The tutor also offered eight to twelve, seven days a week telephone support. Seven ECDL modules were completed over a fourteen-week timeframe, and all ten students achieved certification. Tests were to be completed at the end of each fortnight, according to a pre-set timetable. All participants completed the course in the allotted fourteen week timeframe.

#### **4. Survey Method**

The survey was carried out through combination of face to face interviews and telephone interviews.(used where respondents were remotely located, and where there was difficulty in arranging a suitable time for interview). The author found (with two notable exceptions where telephone conversations lasted for over one hour) that the telephone interviews tended to be more focussed on the questionnaire, and less productive in terms of open-ended feedback. The face to face interviews seemed to produce an atmosphere more suited to exchange of views. The purpose of the study and desire for open feedback was explained to all participants. Nevertheless it is possible that some may have been influenced to

be more positive because the author is associated with the Training Department, who had undertaken the pilot.

## 5. Analysis of Data

The questionnaire were completed by the author based on individuals answers. The information was then transferred to a summary sheet from which analyses were extracted:

### Findings

The following is an analysis of the quantitative survey results: Table six provides a breakdown of respondents by Age and Sex

Table 6: Age – Sex Distribution of Participants

<b>Age</b>	<b>Number</b>	<b>Male</b>	<b>Female</b>
<b>&gt;29</b>	<b>1</b>	<b>0</b>	<b>1</b>
<b>30-39</b>	<b>4</b>	<b>2</b>	<b>2</b>
<b>40-49</b>	<b>3</b>	<b>2</b>	<b>1</b>
<b>50-59</b>	<b>2</b>	<b>2</b>	<b>0</b>
<b>Total</b>	<b>10</b>	<b>6</b>	<b>4</b>

Table 7 hereunder provides an analysis of respondents by Category and Sex

Table 7:  
Analysis of respondents by Category and Sex

<b>Category</b>	<b>Male</b>	<b>Female</b>
<b>Engineer</b>	<b>4</b>	<b>0</b>
<b>Administration</b>	<b>0</b>	<b>2</b>
<b>Clerical</b>	<b>0</b>	<b>1</b>
<b>Network Technician</b>	<b>2</b>	<b>1</b>



The ESB Service profile of respondents was as follows:

Years of experience with ESB	
20%	> 10 Years
40%	10 – 20 Years
30%	21 – 30 Years
10%	31 – 35 Years

Respondents self ranking of Computer Skills prior to the course was as follows:

50% Competent
50% Intermediate
0% Basic

The results of the Participation Questions 6 – 10 were:

- 60% said that they enjoyed learning online while 40% felt the opposite.
- 70% said they found the material easy to use, with 20% saying they found it difficult, with one being non-committed.
- 30% said they preferred to learn by this method, 30% said they would prefer a classroom approach. 40% were non-committal (usually meaning that they felt it depended on the subject)
- A majority, 50% expressed the view that they felt they learned better on their own, 30% expressed a preference for classroom support, and 20% had no preference.
- 60% enjoyed being able to learn at their own convenience, while the other 40% found it difficult to discipline themselves to give the time to it.

The results for Questions relating to the examinations (11/12) were as follows:

- 30% indicated that they would prefer to do all exams on line while 50% indicated that they would prefer manual testing (20% no clear preference).
- 70% found the online exams easy to follow while 30% found online exams difficult to understand.

The results for Questions relating to Supports (13-15) were as follows:

- 80% found the facilitator to be very helpful while 20% were non-committed.
- 30% felt that they received full support from their boss while 30% felt their boss was not supportive of their training. 40% were non-committal).
- 100% agreed that it is important to blend online courses with occasional practical workshops.

The results for Questions relating to Relevance (16-17) were as follows:

- 70% indicated that the course met all their expectations, 10% found it did not meet their expectations, with 2% non-committal.
- 60% said that this course was relevant to their job, 20% said it was not relevant to their job, with 20% non-committal.

The results for the summary Questions (18-19) were as follows:

- 60% found the course excellent 40% found it good.
- 70% said that they would participate in future online courses, with 30% unsure if they would do so.

### **Discussion of Quantitative Results and Interview Impressions**

The two people who opted out at the beginning probably would have experienced difficulty in completing the course without classroom support. The two network technicians who completed this course had already, through an interest in computers, and experience using the internet, a fair degree of expertise, which proved adequate for them to be able to pursue this course through e-learning. However, as individuals who do not use computers in their normal work, even they needed a fair bit of assistance in getting started. This perhaps highlights the fact that for many ESB staff, considerable effort in training in computer would be required in order for e-learning to be a realistic option for need-to-know training.

Discussion with the course tutor indicates that the two main problems which were encountered related to:

- problems encountered in relation to access and performance issues with remote access to ESB networks, and
- problems using the ESB outlook share, and e-mail, for those who do not use these in their daily work

According to the course tutor, one participant who actually needed a fair amount of hands on support in dealing with spreadsheets. Otherwise, the only difficulty in relation to the e-learning course itself, was some frustration among the participants when they were failed and had to repeat a unit because of a 'typing' mistake, something which they felt more traditional methods could handle much better.

Some of the participants were already quite proficient in the material covered by the course. These would have preferred to have been allowed to go right through the course at their own pace, rather than keep to the pace of the other participants.

While all participants seemed to believe there would always be a place for traditional training methods, the older ones in particular, seemed less convinced that e-learning was the way forward. Many felt that they would have benefited from being in touch with others of a similar level who may have had similar difficulties.

Some of the participants saw ESB's interest in this area as being mainly a cost saving one. There seemed to be general openness to the idea of e-learning being the way forward for personal study and interests, and possibly for getting job related information of a specialist nature. However, for job related training most people felt it would be some time before traditional methods would be replaced.

## 6. Conclusions

The pilot study basically has shown that for certain formalised courses, where participants are adequately computer skilled and are well motivated, e-learning can work. It has also highlighted the fact that though ESB has many staff who are highly computer literate, the large majority of staff are not. Many staff are lacking in the basic skills which would make e-Learning a realistic option for much of the need-to do training that is done in the company for the foreseeable future. However, more and more staff find they have to deal with computer applications in their work, and this trend will continue. The workforce will in time need to become more computer literate, and the potential for e-Learning will therefore also increase. ESB's 20 Computer Learning centres, which are geographically distributed throughout the country will continue to be an important resource in developing the computer skills of staff and preparing which will also equip them for e-learning.

ESB has always provided encouragement and support to staff who wish to pursue graduate and post graduate qualifications. e-Learning will offer great learning opportunities for such employees who are normally sufficiently computer skilled, and also highly motivated. The variety of courses on offer here is growing all the time. ESB Training Department needs to keep abreast of the new course offerings that are becoming available, to ensure that managers and key staff are made aware of these new options, and advised of relative merits, etc.

There is a danger that e-Learning is regarded as a 'cost saving' option. If this view were to gain momentum it could undermine the pace of development other than among the Financial Controllers). There needs to be a focus on the benefits to the individual and business of e-Learning.

Also, it is evident that for some staff and for many courses, e-Learning should not replace more traditional approaches. In this connection it would be worth exploring options which involve a mix of approach, geared to the nature of the material and the needs of participants.

If e-Learning is to develop as a part of core training, then it is essential that adequate investment is put into:

- course content – once turned off be a badly designed e-Learning course a participant may be lost for life
- Infrastructure Support – the support required for e-Learning participants is 24X7. People will get very frustrated if they cannot access the required network over a weekend or at night, until someone comes in to fix it on a Monday morning.
- Tutor support – The student needs to be able to get help at the end of a phone, through a chat line or through e-mail, in real time.

Clearly the above three areas act together, so that a failing in any one area, will negatively impact on the other. These investments costs involve up front expenditure, and this requires convincing management of the need to adopt a strategic approach to the development of e-Learning in a company the size of ESB. The development of the related business case is a major challenge for the Training Department.

While an amount of ESB training is generic to business in general, or to the Electricity, most of the training done in the company is ESB specific, and the courses are internally designed. In order to be able to adapt courses to e-learning the Training Department will have to obtain new skills, either through staff development or through external recruitment.

One issue which needs to be borne in mind and addressed in any strategy for e-Learning going forward. This relates to the age profile in the company and how that will change over the next few years. As a result of many years of reduction in staff numbers, through voluntary redundancy schemes and non-recruitment, the average age of ESB staff is 45. Over the coming 5-10 years we are likely to see a continued intake of young staff. Any strategy for e-Learning will have to accommodate both the older less computer literate staff, while maintaining the interest of the younger highly literate ones.

While the above conclusions are drawn with particular reference to ESB, the main thrust has applicability across any organisation which has employees of mixed age, professional background, and computer literacy.

**Course Evaluation  
Appendix 1**

*To help us improve our services for the benefit of future participants, please answer the following questions as accurately and honestly as possible.*

Course Title: **Online - European Computer Driving Licence**

	Male	Female			
1. Gender:	<input type="checkbox"/>	<input type="checkbox"/>			
2. Age Group:	<29, <input type="checkbox"/>	30-39, <input type="checkbox"/>	40-49, <input type="checkbox"/>	50-59, <input type="checkbox"/>	60+ <input type="checkbox"/>
3. Category: _____	4. Service: _____				
	Basic	Intermediate	Competent		
5. Computer Skills (Prior to course)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

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Please tick 1 to 5 as appropriate. The tick closest to 1 indicates you agree with the positive statement and the tick closest to 5 indicates you agree with the negative statement.

<b>Positive Statement</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>Negative Statement</b>
6. I enjoyed learning online	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	I did not enjoy learning online
7. The online course was easy to use	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The online course was difficult to use
8. I prefer to learn online	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	I prefer to learn in the classroom
9. I learned easily on my own	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	I found the lack of classroom support difficult
10. I enjoyed being able to learn at my own convenience	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	I found it difficult to discipline myself to give time to learning online
11. I found the online exam easy to follow	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	I found the online exam difficult to understand
12. I would prefer to have done all exams online	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	I would prefer manual testing only

13. The facilitator was very helpful	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The facilitator was not helpful
14. My boss full supported me in this endeavour	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	My boss was not supportive of this endeavour
15. Is it important to blend online courses with occasional practical workshops	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	An online course does not need practical workshop sessions
16. The course met my expectations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The course did not meet my expectations
17. The online course was relevant to my job	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The online course was not relevant to my job

Excellent      Good      Poor

18. What was your **overall opinion** of this online course?

          

YesNo      Maybe

19. Would you do an online course again?

          

What would you consider the most useful part of the course?

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What would you consider the least useful part of the course?

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What, if anything, would you like added?

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How would you compare this online course to other courses (not online)?

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Any other comments?

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Thank you for your co-operation. The information you have provided will be kept in the strictest confidence and only used to ensure that this training programme is as effective as possible.