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Intranet Adoption in Irish Organisations: A Survey Analysis

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ABSTRACT

This paper outlines the findings of an exploratory postal survey, investigating the adoption of Intranets within Irish organisations. We initially explore background literature covering the issues of definitions, applications, advantages, predicted impact on organisations, information nature and new potential roles of information providers. It is clear from this literature that there is a lack of empirically backed evidence of Intranet adoption. This study therefore attempts to address this imbalance and is centred on selective findings of a postal survey, which investigated the use of Intranets in the top 1000 Irish organisations. The main questions addressed by this survey included 'How prevalent are Intranets in Organisations?', 'What way are they being used?' and 'what is the profile of organisations that claimed to acquire most benefit?'

Key-words: Intranet adoption, Web technology in organisations.

RÉSUMÉ

Cet article présente les résultats d'une enquête postale qui s'est intéressée à l'adoption du concept d'Intranet dans les entreprises Irlandaises. Une analyse des travaux existants fournit des éléments intéressants concernant la définition d'un intranet, son application, ses avantages, son impact sur l'organisation, la nature de l'information qui est présentée et sur les nouveaux rôles informationnels qu'un intranet peut jouer dans une entreprise. Mais, il est clair qu'il y a un manque de recherche empirique dans ce domaine.

Cet article essaye de combler ce vide en rendant compte des résultats les plus marquants d'une étude menée auprès des 1 000 plus grandes entreprises Irlandaises. Les questions centrales auxquelles nous avons tenté de répondre incluent : Quelle proportion des entreprises ont-elles développé un Intranet ou ont l'intention d'en développer un ? Quels sont les rôles de ces Intranets ? Les entreprises où le concept d'Intranet a eu le plus de succès ont-elles un profil particulier ?

Mots-clés : Adoption des intranets, Technologie web dans les organisations.

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1. INTRODUCTION

Following the initial hype, Intranets have become more prevalent in organisation and the time has come to consider the role that these Intranets are playing in organisations. The Intranet, an industry concept, refers to the internal use of internet technology, which can be applied in many ways, such as delivering software tools, E-mail, conferencing software, group support, document sharing, retrieval, and management. Many organisations are developing applications for an Intranet, but these tend to have a cost-saving orientation.

In this study of Intranet utilisation, we set the scene by exploring aspects of the most recent literature, this includes definitions, advantages, applications of the technology, examples of cases and existing empirical research. This paper reports on findings of a postal survey, so the methodology and treatment of non-response bias are articulated in the next section. This is in turn followed by the main findings from the survey, with selective tables and graphs. The paper concludes, with a summary of the findings and a number of further research questions.

2. INTRANET LITERATURE

Notably the use of internet technology is central to all of these definitions. Barbera (1996) defines an 'Intranet' as the *'descriptive term associated with internal corporate networks, implemented using internet technology and services, in particular the WWW systems, but adapted to the specific physical boundaries and internal procedures of each organisation, so*

that certain information is available only to its employees and not to the public Internet'. Many authors agree with this definition. (Gulati 1997, Chapman and Zwicky, 1995, Mathers, 1997).

Potential uses of Intranet are quite varied and can include the following generic functions namely, Event-driven communication, Collaborative workgroups, database sharing, performance reporting and technical support (Gulati, 1997).

The list of cited advantages of Intranets tends to be technical in nature, but they do imply an information perspective. These include platform independence, information transparency, ease of use, cost efficiency, time efficiency, universal client, users have information control, scaleable applications, multiple distribution and single source of data (O'Flaherty and Stanley, 1996).

Some of the more optimistic predictions for Intranets suggests that *'Intranets will transform the nature of information dissemination and access for those companies that make the moderate investment to re-configure their LANs and WANs as Intranets'* (Bentley, 1998). The most comprehensive list of Intranet tasks and categorisations is found in (Myerscough et al., 1997).

2.1. Intranets and Information providers

The role of Intranets in dispersing information is highlighted in Barbera (1996), who also identifies an Intranet as a technology that:

- 1) Allows the delivery of information on demand;

- 2) Can guarantee that the information is accurate and up to date;
- 3) Ensures that the information can be kept in a single source (although it is not necessary that it is the only source of all information) and
- 4) Allows the information to be maintained by those individuals and groups that produce it originally.

The ease of publishing information on a web, even by the user themselves, gives potential to alter the profile of information providers. A greater range of information providers, including departments, and an increased number of individuals are participating in this activity. There are predictions that the traditional role of the IT departments, purely controlling access and administering databases is virtually over. Also it is claimed that Intranets lead to increased end-user empowerment, with the IT departments still providing expertise and resources, but the end-users of information are now often the providers as well as the consumers of information (Wodehouse, 1997). Indications are that this technology has the potential to alter the role of the IS function. This leads to the question, '*what is the new role for IS in the management of Intranets?*' The hype and momentum of the Intranet, coupled with the diversity of information providers implies that IS managers must exercise caution in implementing internet technologies (Wachter and Gupta, 1997).

2.2. Intranets in Organisations

A number of case studies of organisation with Intranets have

been undertaken. British Telecom (BT) developed an extensive Intranet for the British National Health service (Frost, 1997). Netscape, a leading Intranet software developer, lists the following companies as users of their products ; Mobil, Eli Lilly, McDonnell Douglas, AT&T, Cadence Design Systems, Olivetti and John Deere (Andresen et al., 1996). More recent studies include Bansler et al. (1999), Cecez-Kecmanovic et al. (1999) and Damsgaard and Scheepers, (1999).

Recently BT published details of the organisation's own Intranet, which is extensive, serving 120,000 users on 3,500 sites worldwide (Norris, Muschamp and Sim, 1999). The Intranet supports many '*information products*', which are described as increasingly business critical, including ; Desktop directory, validation software, administrative services, internal news and guidance documents and proposals for research on development projects.

The BT Intranet is delivering accredited masters of science course work to employees across Europe. BT also uses the Intranet to share information with non-employees, the product of joint ventures and partnerships. This system is called Global Engineering Fact File (GEFF) and has a password security system, due to the sensitive nature of some of the material (Norris et al., 1999).

Patent information is the core knowledge resource stored on 3M's Enhanced Technical Awareness programme (Ellison, 1998). Siemens have adopted a Newsboard service that gives seamless access to '*external information, newswires, online databases and web sites, as well as all the corpo-*

rate Intranets.' (Jubert, 1998) The European Commission Intranet (EUROPaplus) is an extended Intranet, which reaches 17,000 users and 100 delegations of the European Commission throughout the world. (Quicheron, 1998)

In the Guardian case study (Martin, 1999), the Intranet is used to build an editorial database, but the advent of internet media web-sites has *'heralded more change'*, with *'deadlines vanishing to be replaced with 24 hour news'*. In a different case, News international have developed an Intranet, which front-ends a database providing access to several daily and Sunday newspapers (Erbach and Iley, 1999). The cost reduction of publications in a large Bell operating company is outlined in Wen and Anandarajan, (1998).

Intranets are cited as playing a significant role in enabling employee self service, with 47% of recipients claiming that they use web-based technology for their employees (McCormick, 1998). It is evident from the above-mentioned cases that the Intranet is a well-established phenomenon and has the potential to deliver information and systems in novel ways.

2.3. Intranets, Change and Information Systems

A number of authors have studied the Intranet from the perspective of existing IS concepts. With reference to knowledge management, Intranets can act as the medium for capturing the knowledge of the specialist few and communicating it to the generalist many (George, 1999).

Decision support is also identified as an area where Intranets

can act as an appropriate media for aiding decision support (Strader, Lin and Shaw, 1998). The idea of an MIS Broker, which acts as an intermediary enabling a client-broker-server model for supporting decision support, is also proposed by Ba et al. (1997). In this case the broker is implemented as a software agent, with three types of agent namely:

- 1) Interface,
- 2) Information retrieval and
- 3) Gateway agents.

The potential of Intranet to change the information provision, tending towards end-user, has already been dealt with. A number of commentators have also referred to the change-nature of Intranets and that this phenomenon goes far beyond the technical issues. *'A lot of our experience and research suggests that while Intranet technology is quite cheap, there are usually cultural, people and process issues to get right'*. (Sammons, 1999) This is expanded to identify the key to successful implementation of an Intranet *"is to see it as a tool towards cultural change"* (Sammons, 1999). This is achieved by *'enthusing staff to contribute to the system or even enabling them to do so with direct updating, creates interactivity and a feeling of ownership.'* This information platform is responsible for building a *'new kind of culture with sharing and collaboration - the culture that facilitates strong organisational bonding'* (Buhl, 1999). The Intranet is transformed from an information tool into a meeting place and a medium for communication. Sammons (1999) also claims that the real challenge lies in encouraging change in people and their ways of working. Intranets are identified

as an effective way of involving people in change initiatives by keeping them *'interested, involved and informed.'* As lack of information is one of the major causes of failure in change-oriented projects. An Intranet can be used to get user involvement, by allowing users to make suggestions and give feedback (Sammons, 1999). The author goes so far as to say that some organisations once they have implemented Intranet have evolved towards an open, sharing and innovative culture. This is also echoed by Vize (1999), who states that *'the significance of Intranets are profound, as never before have IT systems had such a direct influence on business culture.'*

2.4. Empirical Research of Intranets use

There is a distinct lack of survey research on Intranets, with two notable exceptions. The user satisfaction of Intranets users in Singapore organisations is explored in Phelp and Mok (1999) and the perceived usefulness and ease of use are cited as the main issues associated with user satisfaction. It is noted in this study that the 83% of all respondents have been using the Intranet for a period of less than one year. The paper calls for more empirical research, *'especially when Intranet implementation goes hand in hand with business process changes'*. Reference (Computer Economics, 1998) indicates a 30% uptake of Intranets, but the lack of research methodology detail is the most notable aspect of this brief article.

There are claims that the literature tends to consist of anecdotes about particular Intranets and these accounts appear on the web pages of certain companies offe-

ring Intranet-related products and services. There is also a lack of *'any comprehensive framework for explaining Intranets, nor do we have any systematic studies of Intranet applications'* (Blanning and King, 1998).

Having reviewed a representative sample of the Intranet literature, it is clear that the expectations for this technology is very high, but we must view this in the context of the lack of empirical research and calls for more systematic studies of Intranet utilisation. This study therefore is an attempt to address this imbalance, with the main objective being to determine the extent that organisations are using Intranet technology and in particular the nature of this use. A secondary objective involves looking at the profile of organisations that achieved change, as a result of developing an Intranet.

3. RESEARCH METHOD

A questionnaire was developed based on a review of the literature. It is exploratory in nature, attempting to establish the nature of Intranets and confirm their broad characteristics. This questionnaire was pre-tested prior to the survey and mailed to a total of 492 named people in separate organisations. The population was derived from the top 1000 Irish Organisations. The sampling strategy required a population that was familiar with the Intranet activity in the particular organisation. Accordingly, individuals responsible for the computing function were targeted if their job titles indicated that they occupied a position similar to the traditional IS manager role or equivalent.

The survey was conducted between January and March 1999 and responses were coded, which allowed a follow-up mail-shot to all non-respondents six weeks later. The first phase returned 136 (27.6%) usable questionnaires and the follow-up phase returned 84(17.1%), giving a total usable sample of 220(44.7%). This response rate is slightly higher than other recent IS related surveys which include 33% (Fink, 1999), 21% (Fitzgerald, 1998) and 36% (Sillince et al., 1998).

3.1. Non-response bias

The relatively higher comparative sample size of this survey strengthens the validity and the likelihood of it being representative of the population. But all postal surveys are prone to the risks of non-response bias. The practice of taking the late respondents as surrogates for non-respondents as a suitable test for non-response bias, is endorsed by Wallace and Mellor (1988) Oppenheim (1996). Therefore a number of questions were randomly selected and were compared, using Chi-Square contingency test. No significant difference between the two samples was found and therefore non-response bias is discounted in this case. The sampling strategy

followed was purposive and non-probabilistic in nature, targeting IS managers who are most closely involved with the Intranet development (Oppenheim, 1996).

4. RESULTS

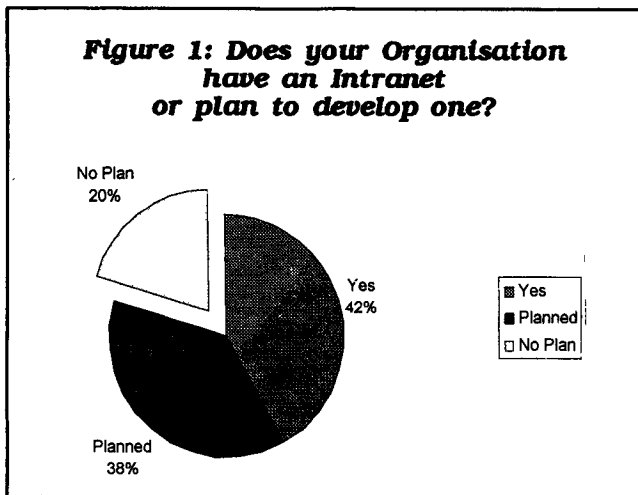
The aggregate background profile of the sample size is shown in table 1. The business category of respondent organisation was compared to the overall population sample and a similar distribution was found. The IS department size is small, predominately in the 1-5 category. The largest Organisation Category is in the Construction/Manufacturing/Distribution category.

4.1. Intranet Adoption

Looking at the adoption figures (figure 1), quite a large proportion of organisations have already implemented Intranets (42 %). Due to the recent nature of the Intranet no comparable figures are available, but this is higher than E-mail adoption in small organisations (26%) (Sillince et al, 1998). The large percentage of organisations with an existing Intranet and planned implementations (79.5%), indicates that the Intranet phenomenon is well estab-

Organisation Categories	%	Size of Org.	%	Size of IS Dept.	%
Consultants/Software House	7.3	1-10	1.1	1-5	48.8
Government/Public Sector/ Education	1.8	10-100	13.2	5-20	31.3
Construction/Manufacturing/Distribut.	51.8	100-1000	63.2	20-100	15.7
Wholesale/Retail trade	9.5	1000-5000	15.4	100+	4.1
Finance/Insurance/Real estate	13.2	5000+	5.5		
Service/Communication	4.5				
Other	11.8				
Total Number	220		220		217

Table 1: Background information on respondent organisations



lished and widely diffused (figure 1). But the postal survey does not establish the extent of diffusion within the organisations themselves. It does not deal with subsequent dis-continuance, a potential outcome of any innovation (Rogers, 1995) by individual users, departments or even organisations.

4.2. Growth Rate

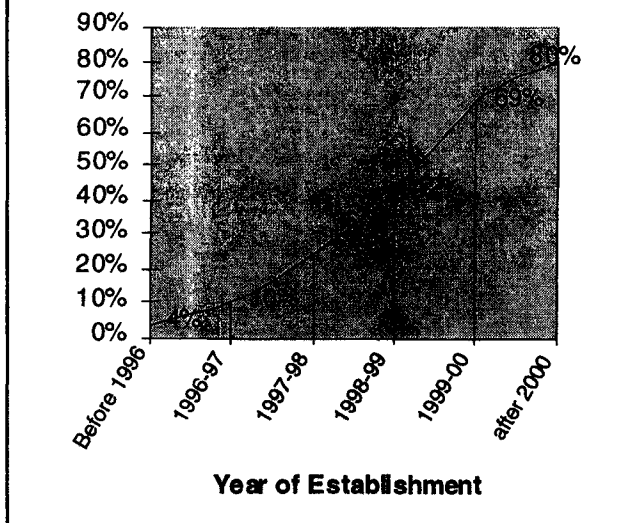
The survey attempted to pinpoint how long the existing Intranets were in place and in the case of planned Intranets, when implementation was expected. It is worth noting that even though some respondents state that they plan to implement an intranet, it is likely that some of these plans will fail to materialize. This data was accumulated and shown in figure 2. This growth curve is similar to the 'S-shaped' adoption curves described by Rogers (1995) who makes a distinction between the adoption of interactive technologies and other innovations. Because this survey deals with independent organisations and a technology, which is bound within

these organisations, accordingly there is no inter-organisational influence and critical mass between organisations. It must be noted that the top element of the 'S-curve', where it bends around year 2000, is a forecast, as organisations were asked to indicate when they planned to adopt an Intranet. There is a possibility that the final outcome would not be so optimistic and it should be considered cautiously. The survey also looked at the potential barriers to non-adoption. Cost barrier (mean 4.57) is clearly the most prominent barrier to implementation, with Efficiency Concerns (Mean 4.16), Insufficient Technical Infrastructure (Mean 4.08), Senior Management resistance or inertia (Mean 4.04) and Lack of awareness (Mean 4.00) also having a significant impact. (See Appendix, Question 21 for code values).

4.3. Activities Supported by the Intranet

The most comprehensive list of Intranet activities is cited by Myerscough et al. (1997) and as a

Figure 2: Historic and Expected Growth of Intranet Usage in Irish Organisations



classification listing, it produced the following result. The top activities not surprisingly are generic including Information Access (72.8%), Communication (71.7%), Document Sharing (68.4%) and Employee Connectivity (67.4%).

The data also indicates that HTML web page development (85%) and file transfer (64%) are the main technologies used in developing Intranets, with very few organisations directly involved in Java or CGI script development.

4.4. Profile of Organisations with well-established Intranets

This research is exploratory in nature and one of the objectives of this paper is to derive a profile of organisations that have achieved change from their Intranet. The Survey asked respondents to indicate if the Intranet has 1)

changed practices in the organisation or 2) enabled significant change. Looking at the results of Chi-square contingency test (table 2) there is association between significant organisational change and the length of time that an Intranet is in place (sign.=0.010). Length of time also has an effect on the relevance of the Intranet, which is a seven point likert scale ranging from Irrelevant to Mission Critical (sign.=0.001). This would indicate that it takes time for Intranets to enable change in an organisation, with the Intranet's relevance approaching Mission Critical. This is consistent with the findings from Damsgaard and Scheepers (1999), who also identified time as an important factor.

User empowerment, cited by (Woodhouse, 1997) as a potential characteristic, appears to have a significant association with Intra-

	Sign.
Size of Organisation V's What way is the Intranet Controlled in your organisation	0.020**
How relevant is your Intranet V's Users are empowered by the Intranet	0.000*
How relevant is your Intranet V's Intranets have changed some practises	0.008*
How long is the Intranet in place V's How relevant is your Intranet	0.001*
The Intranet has enabled significant Change V's How long is the Intranet in Place	0.010 *
The Intranet has enabled significant Change V's How relevant is your Intranet	0.009*
The Intranet has enabled significant Change V's Users are Empowered by the Intranet	0.002*
The Intranet has changed some Practices V's Maturity of the Intranet	0.011**
* Significant at 1% ** Significant at 5%	

Table 2: Chi-Square Contingency Test

net enabled change (sign=0.002). This poses some interesting questions, i.e. is user empowerment responsible for the enabled change? It is also significantly associated with the relevance of the Intranet (sign=0.002), where the term relevance refers to a likert scale from 1 to 7, which is labelled from 'useless' to 'critical' (see Appendix Question 15). Therefore the question here is, 'Are Intranet with user empowerment more likely to reach mission critical status?' These statistic tests do not prove causality or the strength of association.

4.5. Organisation Size, Control and Security

The findings of the survey also indicate that the extent of control of the Intranet is related to the size of an organisation (Sign=0.020). Larger organisations tend to exercise more control over their Intranet, which is quite plausible considering that sensitive corporate information can be stored on the Intranet. Security is also the main concern of organisations with an established Intranet

(Mean 4.25) with efficiency concerns (i.e. employees wasting time surfing) a clear second (Mean 4.22). This security concern is covered in the literature (Blackwell, 1999, Maheshwari, 1999). Insufficient technical infrastructure is the issue that has least impact (Mean 2.71).

4.6. Intranet, Change and Organisation Profile

In attempting to establish the profile of organisations that are early adopters of Intranets, it is worth examining the cross-tabulation of Intranet age versus category of organisation (table 3). Software consultants are clearly early adopters of Intranets (Mean 3.54), which implies a mean of nearly 2 to 3 years. When considering the growth curve (figure 2), very few organisations had implemented an Intranet more than two or three years ago and of these the majority are software or computer technology, related companies. The next closest category is Construction/Manufacturing/Distribution (Mean 2.77), which is also the largest grouping.

Table 3: How long has your organisation had an Intranet?
(see appendix, question 6)

Category of Organisation	Mean	N
Consultants/ Software House	3.54	13
Construction/Manufacturing/ Distribution	2.77	47
Wholesale/ Retail Trade	2.13	8
Finance/ Insurance/ Real Estate	2.21	14
Services/ Communications	2.50	4
Other	2.71	7
Total	2.72	93

In examining the data relating to 1) perceived Intranet enabled change (table 4) cross-tabulated across the organisation categories gives a different result, with the Construction/Manufacturing/Distribution showing higher results, as the sector where Intranet enabled change is most likely (Mean 5.13). The second and third order varies between Consultant/Software House and Wholesale/Retail (see Appendix, Question 14).

Table 4: The Intranet has enabled significant change
(see appendix, question 14)

Category of Organisation	Mean	N
Consultants/ Software House	4.42	12
Construction/Manufacturing/ Distribution	5.13	46
Wholesale/ Retail Trade	4.88	8
Finance/ Insurance/ Real Estate	4.50	14
Services/ Communications	3.50	4
Other	4.71	7
Total	4.81	91

The profile of organisations with an Intranet, which enabled significant change, would more than likely have an Intranet in place for 2 to 3 years and belong to Construction/Manufacturing/Distribution or Consultant/Software House Category.

Details of organisations that have no plan to implement an Intranet are shown in table 5. The largest number of non-adopters is found in the construction/ manufacturing sector, which is also the largest organisational category. The largest proportion of non-adoption is found in the Government/Public sector/Education section (i.e. 50%). All software companies, however, intend implementing an Intranet.

Table 5: Organisations with no planned Intranet

Number (Percent of Total)	
Consultants/ Software	0(0%)
Government/ Public sector/ Education	2(50%)
Construction/Manufacturing/ Distribution	27(23%)
Wholesale/Retail Trade	3(14%)
Finance/Insurance/Real Estate	5(17%)
Services/ Communications	3(30%)
Other	5(17%)

4.7. Change agent, Intranets and the IS function

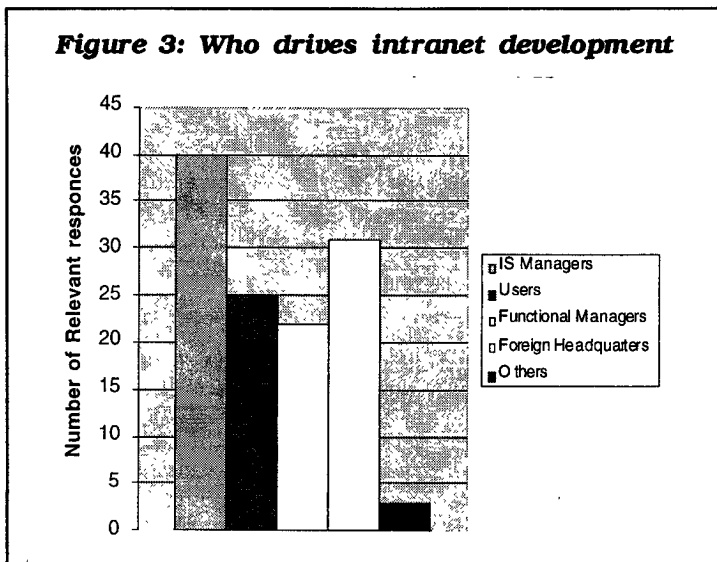
Evidence of new information provision roles can be found in the British Telecom Intranet, which describes the newly developed role of *franchise holder* or *information provider* (Norris et al., 1999). Because of the large amount of operational information on an Intranet a mechanism for ensuring that the information is trustworthy and accurate is required. These franchise holders are generally representatives of the organisational unit responsible for the content. A more sophisticated implementation methodology is proposed and in this case a larger range of roles are identified i.e. Knowledge director, webmaster, publisher, editor and author (Woodun & O'Donnell, 1998). Swiss Life insurance companies

have 'trained web masters in the different areas of the business and it is up to the business areas how they use the Intranet (Barber, 1999).' Data from the survey indicates that a small number of personnel have been assigned a Intranet Responsible role. 45% of all organisations have not assigned an 'Intranet responsible' and a further 45% have between 1 and 3 people working full-time. The nature of this function is worthy of further study, when coupled with the previous evidence that Intranets have enabled significant change in some organisations. This leads us to consider the change role that the 'Intranet responsible' can play.

The role of a change agent (Roger, 1971) has become topical in IS. Reference (Ross, 1992) proposes the role of MIS as a change agent as an extension to Innovation Diffusion Theory, but he refers to the MIS role of Diffusing End-user technology through out the organisation. The call for IS to adopt a change agent approach is

also made by Markus and Benjamin (1996), who conclude that the confusion of differing change models, the fact that IS already see themselves as effective change agents and a number of structural role barriers, including over-reliance on technical expertise, control authority, and an inappropriate reward system, all act as obstacles to the required paradigm shift. With the potential end-user nature of Intranet development and the previously mentioned concerns about the secondary role of the IS function, a paradigm shift of the IS function to a change agency may be appropriate. There is a secondary perspective on the change nature of Intranets and that is what are the potential change roles that IS can and have adopted?

We have commented on the potential change role that IS can have using Intranets. Looking at (figure 3) IS management are described as the group which has the greatest impact in driving the Intranet (43.5%). It is worth re-



membering that the IS manager is the targeted respondent of the questionnaire, so there may be some bias in their favour. The fact that foreign headquarters is the next highest driver of Intranet development (33.7%) is more indicative of the number of multi-nationals based in Ireland. A small number of organisations claim that users drive Intranets development (27.1%), which would contradict some previous claims

that users are empowered by Intranets.

In reviewing organisational departments that have developed Intranets, Information Technology is clearly ahead (75%) (see table 6). Marketing and human resource departments are next with 45% and 42% respectively. This data implies that Intranets are evolving out of the IT departments or possibly that non-IT departments are not supported to the same extent.

Department	Intranet Exists	
	Freq	Percent
Information Technology	69	75.0%
Product Development	30	32.6%
Marketing	42	45.6%
Sales	30	32.6%
Research/Development	23	25.0%
Accounting/Finance	30	32.6%
Human Resource	39	42.4%
Customer Service	28	30.4%
Purchasing	13	14.1%
Distribution	11	12.0%
Manufacturing	17	18.5%
Strategic Planning	15	16.3%

Table 6: Departments which have developed Intranets (Total: 92)

5. CONCLUSION AND FURTHER RESEARCH

In reviewing the survey findings, the number of organisations that have or plan to implement intranets is significant. It clearly highlights the fact that Intranets, or web enabled information systems, have quickly become established in organisations and can 'enable change'. But this impact is not achieved immediately. It takes time for the intranets to establish a business relevance and some organisations, with long established Intranets, claim that they

have reached mission critical status.

In our investigation of the activities supported by the Intranet, the contemporary applications, such as, data-warehousing or workflow management, show little uptake. The main activities supported are generic common activities, namely, information sharing, communication, document sharing and employee connectivity. So data-warehousing or workflow management are not 'piggy-backing' on the increased use of Intranet, instead the Intranet is playing a

more classic information systems role.

A key motivation for this study was the identification of a profile of organisations that have achieved significant change from the introduction of Intranets. These organisations have an intranet in place for 2-3 years or longer and are in the Construction/Manufacturing/Distribution or Consultant/Software House Category.

Some of the predictions from the literature are elaborate and impressive, but many of these claims are not supported by the data. For instance, take the assertion that end users are empowered, which is not supported by the small number of organisations who claim that users drive Intranet development and the fact that the frequency of IT departments that have established intranets, is far higher than the other functional areas. While the data shows that factors like 'user empowerment', 'Intranets have enabled significant change' and 'relevance to the organisation' are associated, it does not provide compelling evidence that a broad spectrum of users are actively empowered and participating in information provision.

The literature points to new potential Intranet oriented personnel roles and this is supported in the findings as many organisations have a small number of people working full-time on Intranet development.

This survey, in exploring the nature of Intranets, confirms the explosion in Intranet adoption and brings more questions to light.

This growth in significance of the Intranet over time poses a range of questions i.e. 'Is this a stage development phenomenon?', 'A critical mass, user volume issue?' or 'More Information Systems

are being web-enabled and made accessible over the intranet?' Over time could these high impact intranets just as quickly become unwieldy, clogged and difficult to use and search.

We do not rule out the possibility that there may be pockets of 'best practise' utilisation of these more recent IS phenomena, such as data warehousing or workflow management. This again will require in-depth investigation.

More research into the potential role of these intranet professionals is also required, especially when coupled with the change potential of Intranet and a potential new role of the IS function. It is clear that further in-depth research is required into this fascinating and developing phenomenon.

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APPENDIX

**APPENDIX 1:
POSTAL QUESTIONNAIRE**

**Section 1.
Background Information**

PLEASE TICK ✓ THE BOX □ WHERE APPROPRIATE.

1. Please indicate your organisation's primary business category

- Consultants/Software House
- Government/Public Sector/Education
- Construction/Manufacturing/
Distribution
- Wholesale/Retail Trade
- Finance/Insurance/Real Estate
- Services/Communications
- Other (please specify):

2. How many people does your organisation employ?

- 1-10 10-100 100-1000 1000-5000
- Greater than 5000

3. How many people are in your organisation's IS department?

- 1-5 5-20 20-100 Greater than 100

4. What is your primary role in the IS department?

- IS Management
- Project/Team Leader
- Systems Analyst
- Programmer
- Systems Administrator
- Other please specify:

5. Does your organisation have an Intranet?

- Yes No

If your answer is Yes then proceed to section 2; otherwise proceed to section 3.

**Section 2.
Organisation with an Intranet**

6. How long has your organisation had an Intranet?

- <6 mt 6 mts-1yr 1-2yr
- 2-3yr >3yr

7. How would you classify the current status of your organisation's Intranet?

Pilot		Developing			Mature	
1	2	3	4	5	6	7
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

8. Which applications are you running on your Intranet or will be in the next year?

	Exists	Planned	No Plan
Data mining	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Information Dissemination	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Groupware	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Transaction processing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E-mail	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Remote access	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Electronic Publishing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Telephony	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Legacy Systems Access	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Customer Management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Field Sales Management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Extranet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Video-conferencing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other			

9. Which technical applications are used in your organisation's Intranet?

- File transfer protocol
- Internal Usenet News groups
- HTML Web Pages
- Internet E-mail (SMTP)
- Gopher Telnet

- Groupware Interface Java
- CGI Scripts ActiveX
- Others (please specify):

10. How many staff members work full-time on the Intranet?

11. Who drives the development of the Intranet in your organisation?

- Users
- IS Manager
- Other Functional Managers
- Foreign head-quarters
- Other (please specify):

12. Describe the Intranet environment in your organisation in terms of development responsibility (distribute to a total of 100%)

- Information Systems group%
- Special Intranet Development group%
- Individual User Development%
- Functional Department Developed%
- Externally Developed%
- Foreign Headquarters%
- Out-sourced development%
- Others (please specify): %

13. Which departments have developed Intranets or plan to develop them in the next year?

	Exists	Planned	No Plan
IT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Product Development	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Marketing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sales	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
R & D	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Finance/Accounting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Human Resources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Customer Services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Purchasing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Distribution	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manufacturing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Strategic Planning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

14. With regard to the Intranet, please comment on the following statements

	Strongly Disagree		Undecided			Strongly Agree	
	1	2	3	4	5	6	7
The Intranet has enabled significant change.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Intranets vary between each Department.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Users are empowered by the Intranet.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The IS department plays a secondary role in the development of the Intranet.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Intranets have changed some practise(s) in our organisation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Intranets require local champions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
User support is essential for a successful Intranet.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

15. How relevant is the Intranet in your organisation?

Not Useful			Useful		Mission Critical	
1	2	3	4	5	6	7
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

16. Comment on potential barriers to further development of your Intranet

	Insignificant			Significant		Critical	
	1	2	3	4	5	6	7
Security concerns	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cost justification	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of awareness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SYSTEMES D'INFORMATION ET MANAGEMENT

Efficiency concerns (Web surfing)

Insufficient Technical resources

Senior management (Resistance/inertia)

Technical capability

User resistance/inertia

Insufficient network Infrastructure

Additional barriers

Financial Systems

HRM Usage

Employee Benefits

Other (please specify):

18. What way is the Intranet controlled in your organisation?

Laissez Faire	Moderate	Control	Total	Control			
1	2	3	4	5	6	7	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Section 3. Organisations without an Intranet

17. Which of the following activities are supported on your organisation's Intranet?

	Exists	Planned	No Plan
<i>Office Administration</i>			
Administrative Workflow	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Standardisation of Forms	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Workflow Improvement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Workflow Reductions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Document Distribution and Reduction</i>			
Document Reductions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Document Sharing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Information Access</i>			
Cycle-Time Reduction	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Data Control Centralisation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Information Access	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sales Person Support	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Individual Connectivity</i>			
Communication	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Employee Connectivity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Group/ Team Connectivity</i>			
Group Connectivity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Project Management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Employee Training</i>			
Training and Education	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Competitive Intelligence</i>			
Competitive Intelligence	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

19. Do you plan to have an Intranet?

Yes No

20. If your answer to the previous question is YES, within what time frame do you intend developing an Intranet?

<3 mths <6 mths within a year after a year

21. Comment on barriers to an Intranet development in your organisation

		Insignificant	Significant	Critical				
		1	2	3	4	5	6	7
Security concerns	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cost justification	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of awareness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Efficiency concerns (Web surfing)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Insufficient Technical resources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Senior management (Resistance/inertia)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Technical capability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
User resistance/inertia	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Insufficient network Infrastructure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Additional barriers								