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THE IRISH JOURNAL OF
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IRISH BUSINESS AND
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1. Contributions should be typed double-spaced on A4 paper, with ample left- and right-hand margins. A cover page should contain only the title, author's name(s) and affiliation(s) and the address (one only) to which proofs should be sent. If accepted for publication, one copy should be submitted on a 3.5" high-density disk using WordPerfect or Microsoft Word.
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- Dublin City University Business School, Dublin 9.
- Faculty of Business, DIT, Aungier Street, Dublin 2.

Environmental Voluntary Approaches: The Irish Experience

DR JAMES CUNNINGHAM* [1]

Introduction – Environmental Driving Forces

There is an immediate pressure on all firms, particularly MNCs to meet stringent legal and regulatory controls, with individual executives being held responsible under criminal laws for firms' environmental damage (Simmons and Cowell, 1993; Vari, 1993). Consequently, as Rondinelli and Vastag note:

> … the threat of criminal prosecution is not the only force driving companies to develop environmental management systems. Increasingly, customers are reacting negatively to corporate environmental mismanagement, shareholders are abandoning companies caught in environmental crises, and financial institutions are including environmental risks in their assessments of loan requests. (1996: 107)

By correctly measuring and managing its environmental costs, a firm can increase product profitability (Fitzgibbon, 1998).

There are several green driving forces that firms face, including specific disasters, public opinion, credibility pressures, regulatory pressures, consumers, shareholders' internal pressure, legislation, competitive pressures, ethical investments, media interest, supplier pressures, the rising costs of mishaps, government regulators, NGOs, scientific evidence, market pressures and new opportunities (Clark et al., 1994; Fitzgibbon, 1998; Jose, 1996; Hitchens et al., 2000; Maxwell et al., 1997; Peattie and Ratnayaka, 1992; Preston, 2001; Rugman and Verbeke, 1998; Schot and Fischer, 1993).

The leading forces for environmental change come from green consumers, pressure groups, insurance groups and green investors (Azzone and Bertele, 1994). Green consumers have significantly influenced new product introductions, product design, product packaging and advertising approaches (Coddington, 1993; Meffert and Kirchgeorg, 1994; Ottman, 1992). This view is further supported by Preston (2001) who states: "it is becoming increasingly

* *Department of Management, National University of Ireland, Galway, e-mail: james.cunningham@nuigalway.ie*

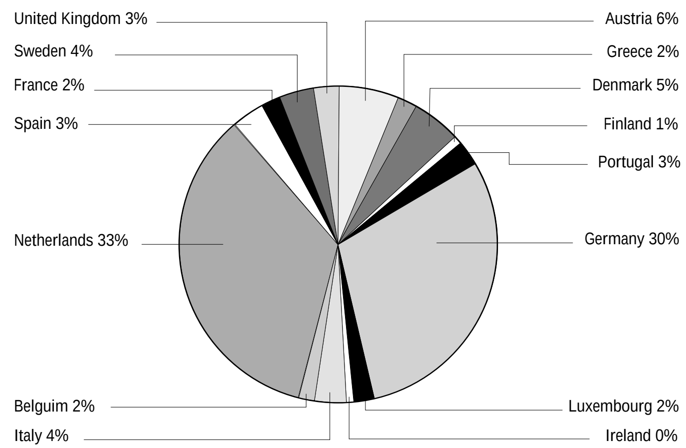
apparent that environmental factors are becoming a purchasing decision differentiator." In addition, growing pressure exerted by regulators and public opinion in shaping firms' responses to environmental issues. Fitzgibbon (1998) refers to these factors as the major "sticks" in getting firms to address environmental issues. The main interest groups in firms' environmental issues include government, employees, suppliers, customers, investors and local communities. In essence, these groups mediate in the process of environmental management and influence the nature of pressures and the response (Williams et al., 1993). The response from policy makers and practitioners to the nature of environmental pressure has been to broaden out the choice of policy instruments for the protection of the environment. This is reflected in the adoption of more innovative policy instruments by national governments. The broadening out of policy instruments from command and control includes market incentive mechanisms and flexible regulations. This is in response to the failure of the market in relation to the environmental protection (Clinch, 2000). One of these innovative policy responses has been voluntary approaches.

Voluntary Approaches – The Practitioner's Response

Environmental voluntary approaches as an instrument for environmental management are preferred by industry but greeted with some degree of scepticism by the environmentalists and other stakeholders (EEA, 1997: 50; Jenkins, 1995). Arguments are made that voluntary approaches are preferred by industry as it buys them time and delays the implementation of rigorous environmental regulations (Bizer, 1999; Bizer et al., 1999). Environmentalists are concerned that voluntary approaches lead to a lessening of environmental protection standards. From a game theoretic analysis perspective, Segerson et al. (1998) and Schmelzer (1999) show that the environmental standards achieved under a voluntary approach may be less than under command-and-control regulations in certain circumstances. Nevertheless, Baeke et al. (1999: working paper) note the increasing growth of voluntary approaches: "Voluntary approaches (VAs) in the field of environmental policy have become pervasive, but their use appears to be varying widely from one institutional context to another."

The few existing surveys of voluntary approaches in the early 1990s claimed they were promising instruments in environmental policy towards industry (BIAC, 1992; Glachant, 1994; OECD, 1994). Voluntary approaches spread quickly in many EU and OECD countries and have been developed by policy makers without theoretical analysis or academic recommendation (Glachant, 1994). A study carried out by Glachant (1994) noted 75 voluntary approaches in 12 OECD countries. Surveys of voluntary approaches have been carried out in Japan by Imura and Suigiyama (1998), in the US by Mazurek (1998) and in the EU by Börkey (1998), CEC (1996), DeClerq et al. (2001), EEA (1997, 2000), Lévêque (1998) and OECD (1999).

Figure 1.1: Number of Negotiated Agreements in the European Union



Source: Börkey, P. and F. Lévêque (2000) "Voluntary Approaches for Environmental Protection in the European Union: A Survey." European Environment, Vol. 10, No. 1, pp. 35–54

The numbers outlined in Figure 1.1 are probably even greater as the CEC (1996a) list is not exhaustive (Börkey, 1998). Such increases have been accounted for by Börkey and Lévêque (2000) by using data from CEC (1996a), EEA (1997), Glachant (1996), OECD (1997) and Oko-Institut (1998).

Table 1.1: Negotiated Agreements by Sector of Economic Activity

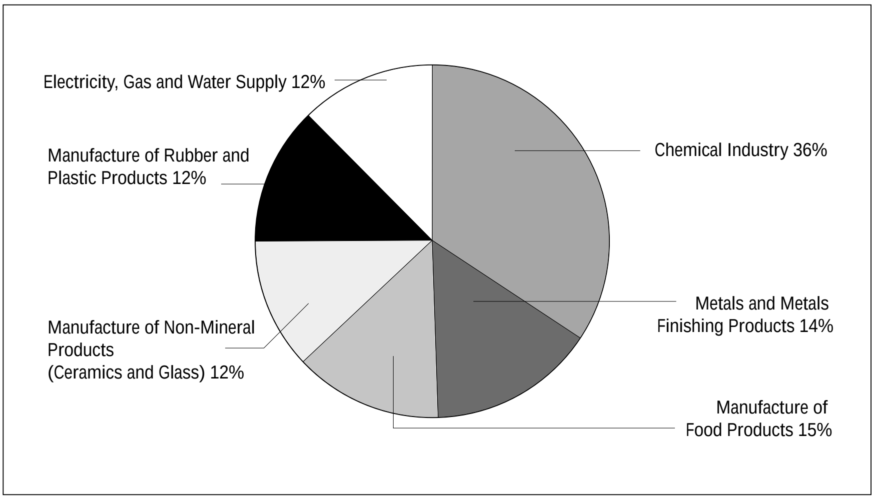
Member State	Agriculture	Energy	Industry	Transport	Tourism	Number of NAs
Austria	x		x			20
Belgium		x	x			6
Denmark	x	x	x			16
Finland			x			2
France		x	x			8
Germany		x	x			93
Greece		x	x		x	7
Ireland			x			1
Italy			x			11
Luxemburg			x			5
Netherlands	x	x	x			107
Portugal	x	x	x			10

Spain		x	x			6
Sweden	x		x			11
United Kingdom		x	x			9
Total						312

Source: Adapted from EEA (1997) Environmental Agreements – Environmental Effectiveness, Environmental Issues Series No. 3: Copenhagen, Vol. 1 and 2, p. 23, and Börkey, P. and F. Lévêque (2000) "Voluntary Approaches for Environmental Protection in The European Union: A Survey" European Environment, Vol. 10, No. 1, pp. 35–54

Regarding the distribution of negotiated agreements in the EU, the industry and energy sectors are by far the most important, with all Member States implementing them to abate industrial pollution and eight Member States using them in the energy sector (see Table 1.1 and Figure 1.2). One reason for this, as indicated by the CEC, is that a large number of environmental agreements are found in economic sectors where the most pollution activities occur (see Table 1.1). However, the percentages may be slightly misleading due to double counting (CEC, 1996a:13).

Figure 1.2: Main Industry Sectors for the Use of Negotiated Agreements



Source: Adapted from EEA (1997) Environmental Agreements – Environmental Effectiveness, Environmental Issues Series No.3: Copenhagen, Vol. 1 and 2, p. 23, and Börkey, P. and F. Lévêque (2000) "Voluntary Approaches for Environmental Protection in The European Union: A Survey" European Environment, Vol. 10, No. 1, pp. 35–54

The greatest proliferation of negotiated agreements in the EU is in the field of waste management, using the Fifth Environmental Action Programme Theme (5EAP) as a thematic classification template (see Table 1.1). This is due, in the main, to the proliferation of agreements for household waste management and battery recycling (Börkey and Lévêque, 2000; Oko Institut, 1998). DeClercq et al. (2001: 23) note: "It can be seen that every country of the European Union uses voluntary approaches in the field of waste management." The preference for negotiated agreements within the EU is explained by OCED:

> They [negotiated agreements] appear to be the preferred instrument for waste management in most countries, given the technological uncertainty that prevailed when these problems were first addressed. In fact public authorities needed close industry co-operation in order to define realistic policy objectives. (1999: 34)

Environmental Voluntary Approaches – A Rich Terminology

There is a rich and abundant terminology for voluntary approaches in an environmental context, such as self-regulation, voluntary accords, environmental agreements, voluntary initiatives, negotiated environmental agreements and private agreements (Carraro et al., 1999; EEA, 1996; Higley et al., 2001; Lévêque, 1998; Segerson et al., 1998; Storey, 1996; Storey et al., 1999). Consequently, there is no standard definition of voluntary agreements, as Storey states: "what constitutes a VA can vary greatly. VAs typically incorporate a wide mix of mechanisms ranging from economic incentives, to public recognition to encourage or support industry participation." (1999: 188) This variation in definitions has led to confusion and terms are sometimes used for the same of kind of instruments (Baeke et al., 1999). The EEA (1996: 20) argues that environmental agreements do not really capture the true nature of many agreements. Moreover they argue that terms such as negotiated agreements and covenants reflect more accurately the nature of the instrument. In environmental policy terms a voluntary agreement is an agreement between a public authority and a coalition of firms whereby industry commits itself to pollution reduction (Glachant, 1994). Higley et al. concur with the broad definition of voluntary approaches:

> Voluntary approaches is a broad term that encompasses many different kinds of arrangements, such as self-regulations, voluntary initiatives, voluntary codes, environmental charters, voluntary accords, voluntary agreement, co-regulations, covenants, and negotiated agreements to name just a few. All these types include three main different instruments: unilateral commitments made by polluter, negotiated agreements between industry and public authorities, and public voluntary scheme developed by environmental agencies. (2001)

Categorising and Evaluating Voluntary Approaches

In essence voluntary approaches are commitments from industrial sectors and firms to improve their environmental performance and can cover a large variety of different arrangements. In some instances the commitments to improve environmental performance go beyond regulatory requirements (OECD, 1999: 6–10). Table 1.1 draws together the main and differing categorisation of voluntary approaches.

Evaluation of voluntary approaches in comparison with other policy instruments has been limited (Krarup, 1999). Criteria have been developed in general terms for evaluating policy instruments, but in the last number of years attempts have been made to develop a general criteria list for voluntary approaches. However, Mazurek (1998) notes: "Assessment data that has been developed suggest that the primary benefits of VAs may be intangible and in any event difficult to measure."

Table 1.2: Categorisation of Voluntary Approaches

OECD (1999); Higley, Convery and Lévêque (2001); Lévêque (1998)	Lynes and Gibson (1999)	Storey, Boyd and Dowd (1999)
Unilateral Commitments	Voluntary pollution control measures by individual firms	Target-based VAs
Negotiated Agreements	Government to industry pollution reduction challenges	Performance-based VAs
Public Voluntary Schemes	Performance agreements between industry and governments	Co-operative R&D Vas
Private Agreements	Voluntary adherence to industry sector codes of practice Business to business challenges, incentives and agreements	Monitoring and reporting VAs
	Agreements between industry and non-government third parties	

Assessing the effectiveness and performance of voluntary approaches is problematic but this difficulty is not confined to voluntary approaches as the OECD (1997) notes: "The evaluation of any environmental policy instrument is usually constrained by little evidence availability, as it has been recently argued regarding economic instruments." Furthermore, the OECD (1999) notes:

> The evaluation of voluntary approaches is hindered by the novelty of the approaches and the fact that they have been created by practitioners. The latter affects the availability of theoretical results on their performance, whereas the former constrains empirical investigation.

The assessment of environmental effectiveness of a policy instrument should be assessed against an alternative policy instrument or using the "business as usual" scenario (EEA, 1997: 12). Therefore the assessment should be done without being able to attribute any environmental improvement to the voluntary approach. The EEA (1997) encountered specific problems in assessing the environmental effectiveness of six environmental agreement case studies. The main problem was the general absence of a quantitative baseline ("business-as-usual" scenario) against which to assess the effectiveness of the environmental agreements. Other problems centred on the lack of quantitative data on the reference situation prior to the agreement and the lack of quantitative data on the current situation (EEA, 1997: 12). Consequently, the information availability for evaluation purposes is particularly low for the voluntary approach. The evaluation of voluntary approaches should include environmental effects and abatement costs, as well as different kinds of administrative costs (Russell and Powell, 1999). Moreover, Higley et al. strike a cautionary note regarding the assessment of voluntary approaches:

> Finally, because voluntary approaches are relatively new in the environmental policy arena, a general dearth of empirical information exists to determine accurately the effectiveness of some growing number of VAs. Until the results of these agreements have been analysed and quantified, any real assessment of the effectiveness of VAs is impossible. (2001: 12)

The real question regarding environmental effectiveness is in what way in particular do voluntary approaches impact on the environment. Börkey and Lévêque (2000) note that two levels of environmental effectiveness can be distinguished, namely the *ex ante* and *ex post* assessment.

Ex Ante Analysis

In dealing with the ex ante assessment the potential costs of a regulatory policy approach are assessed based on data regarding the relevant environmental problems and economic context. In essence, the development of environmental targets is the result of a policy-devising process, dependent on the bargaining power of the agents involved in setting the targets. The domination of industry interests over social interests (the notion of regulatory capture), resulting in relatively unambitious pollution targets, is particularly strong in the case of negotiated agreements. Part of this ex ante assessment uses simulation and forecasting studies but, as the OECD (1999: 69) notes, "Ex ante evidence is usually very closely linked with theoretical evidence since they are based on theoretical predictive models."

Ex Post Analysis

Ex post analysis measures the gap between the initial target and the effectively achieved environmental improvement (EEA, 1997; JEP, 1998; Krarup and Larsen, 1998; Kroemer and Hansen, 1998). This assessment typically assesses the costs and benefits of the regulatory policy. Difficulties can arise in the assessment due to the disentanglement problem, but this assessment carries the advantage of direction observation rather than assumptions regarding behaviour of actors. The gap that may result from the assessment is called the "implementation gap" and the explanation for a possible gap may lie with problems associated with the level of implementing the policy (Börkey and Lévêque, 2000). Other explanations focus on the choice of instrument or the free riding problem.

Evaluation Criteria

There has been much debate regarding the criteria to be used in assessing the environmental effectiveness of voluntary approaches (EEA, 1997; Carraro and Lévêque, 1999; Labatt and Maclaren, 1998; Lévêque, 1998; OECD, 1999; Ospchoor and Vos, 1989; Rietbergen et al., 1998; Storey, 1996; Storey et al., 1999). The OECD (1999: 67–9) uses the evaluation criteria of environmental effectiveness, economic efficiency, administration and compliance costs, competitiveness implications, soft effects, innovation and learning effects and viability and feasibility. The EEA (1997: 41) outlines a number of criteria that it used to assess the effectiveness of the environmental agreements, including environmental effectiveness, cost-effectiveness, dynamic effects on technical change, conformity with prevailing institutional frameworks (polluter pays), soft effects and wider economic effects. Nevertheless, Carraro and Lévêque (1999: 6–9) and Lévêque (1998) outlined a number of dimensions by which the performance of voluntary approaches can be assessed. These dimensions include environmental effectiveness, implementation effectiveness, cost-effectiveness, stimulation of innovation, feasibility and competition. Moffet and Bregha (1999: 24) suggest that the following criteria would be helpful in assessing voluntary initiative: environmental efficiency, administrative and compliance costs, industry cost-effectiveness, promotion of cultural change and avoidance of adverse competition and trade law effects. Bohm and Russell (1995), Russell and Powell, (1999) and Krarup (1999) outline the criteria for policy evaluation based on general policy criteria. These include static concerns, dynamic incentives, monitoring and enforcement, flexibility in case of economic changes, institutional demands, political consideration and risk (see Table 1.3 for summary of evaluation criteria to assess the effectiveness and performance of voluntary approaches).

The Case Study of Irish Packaging Voluntary Agreement

In 1992, the EU Commission proposed a Directive on packaging waste, to harmonise national measures concerning the management of packaging and packaging waste to ensure the efficient functioning of the single market and to provide a high level of environmental protection. The Directive on Packaging and Packaging Waste was finally signed into law in December 1994. This Directive

Table 1.3: Evaluation Criteria to Analyse the Effectiveness and Performance of Voluntary Approaches

	OECD (1999)	EEA (1997)	Carraro and Lévêque (1999)	Moffet and Bregha (1999)	Bohm and Russell (1995) Russell and Powell (1999) Krarup (1999)
Environmental Effectiveness	✔	✔	✔	✔	
Cost-effectiveness	✔		✔	✔	✔
Implementation Effectiveness		✔	✔		✔
Stimulation of Innovation	✔	✔	✔	✔	✔
Feasibility and Competition	✔	✔	✔	✔	
Soft Issues and Effects	✔	✔			
Economic Efficiency	✔				
Promotion of Cultural Change				✔	
Risk					✔

applies to all types of packaging. The Directive makes a clear distinction between recovery and recycling. The targets set out in the Directive are as follows:

- A minimum of 50 per cent and a maximum of 65 per cent of packaging waste to be recovered within five years of the Directive coming into force (1 July 2001).
- A minimum of 25 per cent of packaging waste to be recycled. Within this, a minimum of 15 per cent per material stream to be recycled. It was envisaged that these targets would be substantially increased in the years 2001–2006. Ireland received a derogation from these requirements and an overall recovery rate of 27 per cent is set for the first five years.

The IBEC Taskforce – Industry Taking Up the Challenge

During the summer of 1994, Irish Business and Employers Confederation (IBEC) was invited by the Minister for the Environment to draw up a strategy for the organisation and financing of a system of recovery/recycling of packaging waste to meet certain targets. The taskforce was charged with the task of proposing an industry led scheme rather than statutory obligations imposed by government. This industry taskforce was made up of industry representatives, converters, fillers, retailers and representatives of small business. The taskforce focus was to propose a cost-effective strategy that met environmental targets. By April 1995 an internal document was prepared by the taskforce, which was then submitted to Coopers and Lybrand to assess and estimate the costs of implementing the proposals. The taskforce recommended that an industry compliance organisation called Repak should be set up to run and be funded by industry to co-ordinate recycling/recovery of packaging waste. Furthermore, they added a gradual "learn as you go" approach be used in relation to this packaging voluntary agreement.

The Mechanism – Waste Management (Packaging Regulations) Act 1997

In consultation with the taskforce the Irish government drafted customised legislation to promote packaging recycling based on an industry-led response co-ordinated by Repak. By July 1996, the Waste Management (Packaging Regulations) Act 1996 became law. This piece of legislation is designed to assist and promote the recycling of packaging waste and to facilitate the achievement of the packaging waste recovery targets laid in the EU Directive 94/62/EC. On the 10 June 1997, the Minster for the Environment and Local Government Brendan Howlin, under Article 15 of the Waste Management (Packaging) 1997, granted Repak approved body status to operate a packaging waste recovery scheme. Repak is a private limited not for profit company under Irish law with a board of directors and a chief executive. The aim of Repak is to achieve agreed targets for recycling of packaging waste in the most cost-effective way for its own members. The national target set by the EU Directive on Packaging and Packaging Waste was a recovering rate of 25 per cent of packaging waste by 2001. Repak agreed a target of 27 per cent recovery rate by July 2001. The key stakeholders of the Irish packaging voluntary agreement are outlined in Table 1.4.

Table 1.4: Key Stakeholders in Irish Packaging Voluntary Agreement

Stakeholder	Power to influence strategy	Level of interest in activities
Government:		
Department of the Environment and Local		
Government	High	High
Environmental Protection Agency	Low	High
Department of Finance	High	Medium
Department for Public Enterprise	Medium	Medium
Local Authorities	High	High
Non-Governmental Organisations	Low	Medium
Waste Contractors and Reprocessors	Low	High
Repak Members	Medium	High
Industry	High	High
Customers	Low	Low
European Union	Medium	High

The Carrot and Stick

Companies have legal obligations under the regulations if they annually place more than 25 tonnes of packaging on the Irish market and have an annual turnover of more than 1.27 million. Companies can chose to comply by meeting the requirements as an individual operator by registering with the local authority or they can secure exemptions from rigorous elements of the regulations by joining an approved waste recovery scheme, such as Repak. There is a legal obligation on all producers to recover waste on their own premises and they are obliged to have waste taken back by a supplier or recovered or made available for recovery. It is an offence for a producer to dispose of packaging waste without first making it available for recovery. Repak members are exempted from taking back packaging waste under the regulations.

Penalties and Enforcement

The penalty for not complying with the Act on a summary conviction is a fine of up to €1,904 and or imprisonment for a term of up to twelve months. On conviction on indictment (which involves action by the Director of Public Prosecutions) a fine of up to €12.6 million and or imprisonment for a term up to ten years can be imposed. Under this legislation each local authority is responsible for the enforcement. The local authority has the power of entry and inspection by authorised persons appointed by the local authority. In addition, the local authority can serve notice on a person to provide information and can take summary proceedings for an offence. Furthermore, a private individual can take summary proceedings against an individual or corporate body for non-compliance.

Objectives of the Approved Body – Repak

The objectives of Repak were outlined in the submission to the Minister for the Environment Brendan Howlin in 1997 (see Table 1.5).

Table 1.5: Objectives of Repak 1997

• Develop and agree strategies with industry for meeting recycling/recovery targets agreed with Department of the Environment
• Plan and implement such strategies
• Raise and disburse funds from members of the Scheme to contribute towards the implementation of such strategies
• Maintain recycling/recovery records in respect of packaging produced by its members
• Undertake promotional campaigns to encourage co-operation in recycling
• Report from time to time to the Department of the Environment and to members of the Scheme.

Source: Repak Waste Recovery Scheme Membership Rule (Submission to Minister for the Environment) 30 May 1997

Develop and Agree Strategies with Industry

In July 2001, Repak achieved the 27 per cent target originally agreed between industry and the government as a result of IBEC's Industry Taskforce (see Table 1.5). It is expected that by 2005, Ireland will have to recover 430,000 tonnes of packaging waste and have facilities in Ireland to recycle a minimum of 217,000 tonnes (Hetherington, 2000).

Table 1.6: Actual Achievements of Repak

National Target of 27 % achieved July 2001	
1998	Target 19% Actual 20.6% (93,160 tonnes)
1999	Target 21% Actual 21.0% (114,216 tonnes)
2000	Target 23.5% Actual 26.4% (146,000 tonnes)

Plan and Implement Such Strategies

In order to achieve the targets agreed, Repak set up a structure to recruit and ensure member companies complied with the rules of membership. Due to practical concerns Repak, in order to encourage recovery and recycling of industrial waste, developed a list of waste contractors and introduced the uplift scheme and RPS scheme for members. For household packaging waste, Repak fund Oxigen in Dublin and plan to support similar kerbside initiatives in Cork, Galway, Limerick, Tipperary and Waterford (Hetherington, 2001). Repak has also provided financial support to increase the number of bring-banks for bottles and cans from 350 in 1997 to 770 in 1999.

Raise and Disburse Funds from Members

Repak set up a fee structure for member companies initially based on turnover and later on packaging material waste arising. In the initial years the membership fees were the lowest in Europe for such a scheme. However, late paying by some members meant Repak was financially weak. Since the introduction of the new fee structure and green dot licensing fees, Repak is financially stronger.

Maintain Recycling/Recovery Records on Respect of Packaging Produced by its Members

Repak had set up a system to record packaging waste data for each member. Due to the complexity of the packaging waste data required, many members had difficulties in returning data (Stringer, 2001). However, there are questions regarding the reliability of these records (Farrell, 1999; Hetherington, 2000). The complexity issue is supported by Perchards (2000: 27) who state, "we feel that the data forms are unduly complex and can find no justification for some of the requirements mentioned to us by members who find them difficult to satisfy."

Undertake Promotional Campaigns to Encourage Co-Operation in Recycling

Repak has failed to deliver fully on this objective. Much of its communication activities focused on the recruitment of new members through newspaper advertising. Consequently, there remains much confusion over what Repak does, as Perchards (2000: 29) notes, "In the course of our research, we were told that there remained much confusion among Irish industry about the role of Repak. Many companies still thought Repak was a government agency."

Repak undertook joint promotional initiatives with Dublin Corporation on the Green Christmas Campaign 2000. However, it has not actively pursued joint promotional campaigns with other local authorities. Its communication with local authorities has mainly centred on the enforcement issue. Also there is Dublin bias perception among many stakeholders. On a positive note the Green Dot has been a useful mechanism to communicate Repak's mission to consumers. However, its promotion has been inconsistent due to inadequate financial support for an advertising campaign of the Green Dot. Repak, in its original submission in 1997, focused on teachers and stated that they intended: "To advise teachers of the Repak initiative so that a recycling culture can be cultivated in school children who the Repak Board see as an extremely important element in the success of the initiative." Repak has failed to undertake any promotional activity in this regard with teachers and schools. Other similar schemes throughout Europe have educational packs for use in schools.

Report from Time to Time to the Department of the Environment and to Members of the Scheme

Repak has failed to manage its relationship with the Department of the Environment and Local Government effectively. The information provided by Repak to the government has been in the form of its Annual Report. Repak failed to highlight effectively successful aspects of its operations or the difficulties it was experiencing. Perchards (2000: 31) notes: "We have formed the impression that much of the Government's impatience with Repak is in part the result of poor communication."

The communication problem between Repak and its members has focused mainly on collation of packaging waste data, the provision of new services and the changes in fee structures. The newsletters reflect this focus. Repak has failed to communicate success stories to member companies about its activities and examples of best practice among members. Information regarding the disbursement of resource and new policies on issues is limited. Perchards (2000) recommend Repak should publish and distribute an abridged version of its annual report to member companies, the government and other interested parties.

Free Riders and Self Compliers

By September 1998, in excess of 200 companies of the estimated potential total of 2,000 companies were Repak members. In 1999, a large group of 1,500 independent retailers joined Repak. However, more than 150 members failed to comply with the membership rules of Repak and 20 companies were expelled from the scheme. Repak is not in a position to compel companies to join thus reducing the number of companies free riding.

Some free riders continue to resist this legislation vigorously. In some instances, officials of local authorities were threatened and verbally abused during company site visits. Initially, only three companies opted for the self-compliance route via registration with local authorities. One possible reason for the low number of self-compliers is that some local authorities encouraged companies that approached them to register as self-compliers to register with Repak, thus reducing their administrative burden.

Lessons for Approved Bodies in a Voluntary Approach Context

Based on the Irish case study a number of recommendations can be made regarding the management and operation of an approved body such as Repak, in a voluntary approach context. Firstly, the approved body should submit to government a proper business plan containing a vision, a mission statement and clear objectives that are fully costed and this should be publicly available. In addition, the business plan should contain an implementation plan regarding the roll-out of services, the time-frame involved and the resources required. Moreover, the job specifications for key management posts and areas of responsibilities should be clearly laid out and should be part of the business plan. Secondly, the proposed organisational structure and governance structure of the approved body should be made explicitly clear and this should be altered once a certain membership number is attained. Thirdly, within the framework of the voluntary agreement, a formal review mechanism involving all stakeholders would be triggered if certain objectives were not met over a prescribed period. Fourthly, the approved body should spend a significant proportion of its resources on marketing and branding the scheme among consumers and other stakeholders, thus ensuring deliverance of tangible and intangible benefits for its members. Fifthly, the CEO of an approved body should be appointed based on his significant senior management experience, but also the CEO must be respected among his peers and have a track record within the country. This adds creditability to the scheme. Sixthly, the approved body should actively manage its relationships with all stakeholders, particularly the government, by keeping them informed of ongoing successes as well as problems. Moreover, the approved body should make annual reports available to the general public free of charge and publish the names and addresses of companies who are members of a compliance scheme. Lastly, the approved body should ensure proper management of its internal affairs and development mechanisms that help promote best practice among its membership.

Some Conclusions from the Irish Packaging Voluntary Agreement

Some Companies Don't Care

The reality is that many companies do not care about environmental issues. Their focus is on competitive success in the short term and the future viability of the business. However, the real engagement of the consumer in the voluntary agreement could alter this attitude.

Inadequate Enforcement Mechanisms

To date under the Waste Management (Packaging) Regulations 1997 only a few companies have been prosecuted successfully. Clearly, if governments are going to enact new environmental regulations, they need to ensure that adequate financial provision is in place to support enforcement.

Sufficient Information

There still remains a lack of awareness among most companies of their responsibilities under this legislation described. Moreover, there is ongoing disagreement regarding baseline packaging statistics. Consequently, adequate and accurate information is critical to assessing the success of a voluntary approach.

Generating Awareness among Key Stakeholders

The IBEC taskforce recommended that companies, local authorities, consumers and teachers become involved in an extensive education/awareness campaign. To date no campaign has been launched to raise the awareness of consumers about this legislation. Consumers and teachers are potential catalysts for companies to behave in a responsible environmental manner. Consequently, significant efforts should be made to include them in the process of developing and implementing a voluntary approach.

Lack Recycling Capacity

Currently, Ireland does not have the capacity to recycle some waste streams being produced by Irish companies. The lesson for policy makers is to ensure that a country has the necessary recycling and recovery infrastructure in order to deliver the targets set by national government. If this is not the case, the government should provide public funding or enter a public private partnership in order to build national recycling capacity. If these measures are not available the government could use incentives regarding private investments in this area, for example capital allowances and so on.

Evaluation of the Irish Packaging VAs (Voluntary Approaches)

A definitive assessment of the Irish packaging VA in relation to effectiveness and performance is hampered by the lack of quantitative baseline ("business-as-usual" scenario) against which to assess the effectiveness of the VA.

Environmental Effectiveness

Environmental effectiveness depends on two factors: the environmental target or objective of the agreement, and whether it is met. To ensure that the targets are better than business-as-usual, the target-setting process should be open and transparent. The Irish packaging agreement met its 27 per cent recycling target in 2001. It has been a success in terms of meeting the target set in 1997 despite all the difficulties that beset this voluntary agreement.

Cost and Economic Effectiveness

Voluntary approaches allow firms/industry to choose the means of compliance as the firms are likely to have better information than the regulator and thereby a better ability to implement the least cost option when faced with the appropriate incentive. This results in cost-effectiveness, which is the achievement of a given environmental improvement at least cost (Baumol and Oates, 1971; Carraro and Lévêque, 1999: 8). From an empirical study of the Irish packaging VA, the actual average cost of compliance for Repak respondents was €21,429 in 1997 and this rose to €46,109 in 2000 (Cunningham and Clinch, 2004). Some 44 per cent of Repak respondents reported an increase in overhead costs directly related to compliance with the packaging regulations. Overall, the costs of compliance reported have risen since 1997. An explanation for this as cited by Rondinelli and Vastag (1996) for the reported increase in overhead costs may be the underestimation of costs.

Moffet and Bregha (1999) argue that voluntary agreements are "certainly more cost-effective from the perspective of industry than command-and-control regulation because they provide the flexibility to respond to stated environmental objectives in the manner that makes most economic sense". Given the estimated cost of the alternative routes of compliance by Repak respondents and the increase in packaging, labour and overhead costs, they reported that an argument could be made that it may make more economic and strategic sense for companies to self-comply or even free ride (Cunningham and Clinch, 2004).

Viability and Feasibility

Viability and feasibility refers to the political and social acceptance and credibility of the measures (Börkey and Lévêque, 2000: 26). The OECD (1999: 88) notes: "The crucial relevance of tackling transparency concerns in order to guarantee social acceptability of NAs also applies for public voluntary programmes." One of the most significant threats to the viability and feasibility of voluntary agreements is that lack of credibility in the eyes of various stakeholders. Therefore, to ensure the feasibility and viability of voluntary approaches, the objectives and targets should be clearly laid out and the monitoring procedures should be independent and verifiable (Carraro and Lévêque, 1999: 8). In this Irish case the targets were laid out but the viability of the VA is constantly under threat due to the significant free riding problem and the lack of enforcement by local authorities, particularly in the early years of the agreement. The credibility of the VA was further compounded by the difficulties Repak experienced implementing the VA. Over the last three years Repak have made strident efforts to ensure the viability and feasibility of the packaging voluntary agreement.

Competition

Voluntary approaches by their very nature mean firms can co-operate, which raises the fear of collusive behaviour and lessens the intensity of competition. As Carraro and Lévêque (1999: 9) note: "There is a fundamental fear that voluntary approaches will lessen competition and raise non tariff barriers." This situation has not arisen yet in the Irish packaging agreement, but it could occur as the agreement gains further momentum.

Stimulation of Innovation

In relation to innovation and voluntary approaches there are two main schools of thought, namely the no innovation scenario (Ashford, 1999) and innovation through collective learning (Aggeri and Hatchuel, 1996, 1998; Glachant, 1999). Based on an empirical investigation of an Irish packaging voluntary agreement its findings would indicate that the no innovation scenario is applicable to the Irish packaging voluntary agreement (Cunningham and Clinch, 2003).

Soft Effect

Soft effects can be significant but difficult to measure and have not been empirically investigated. The OECD (1999: 77) defines soft effects as: "those behavioural changes due to an increase of environmental awareness in business or to information dissemination." For the majority of negotiated agreements raising environmental awareness forms part of the objectives. The diffusion of information for negotiated agreements may be through the creation of forums, thus leading to collective learning through information exchange. An example of this is the French ELV scheme. An empirical study of the Irish packaging VA has concluded the soft effects as outlined by the OECD (1999: 88) have not materialised (Cunningham and Clinch, 2003).

The Irish packaging voluntary agreement highlights some of the potential drawbacks and limitations to voluntary approaches. Some of the limitations of voluntary approaches are due to their poor design and implementation, as they are not backed by effective legislation and thereby lose the trust of many stakeholders and generate negative publicity (Mazzoleni, 1999). In addition, Moffet and Bregha (1998) note that trust can be lost as certain stakeholders use voluntary approaches to stifle future regulatory policy development and enforcement. In overall terms, the Irish case highlights the limitations of using voluntary approaches. Firstly, in the absence of effective implementation of a VA and enforcement of the environmental legislation that supports it, companies do not participate, which leads to significant levels of free riding as in the Irish case. Secondly, VAs should be used in conjunction with other forms of environmental regulation, thereby ensuring that companies meet certain environmental standards. The Irish case highlights this deficiency. Thirdly, one of the real limitations for governments in adopting voluntary approaches is the risk of regulatory capture (Baeke et al., 1999). This occurred in the Irish case as there was no effective enforcement of the regulations as local authorities did not have the resources.

Concluding Thoughts: A Possible Trojan Horse

The Irish case study does highlight some interesting issues, given the fact that the Irish economy has grown rapidly since 1996. The fundamental question the Irish case study raises is why more companies have not joined the Irish packaging voluntary agreement. There are a number of possible explanations including the fact that Repak members did not achieve the benefits of membership that were initially promised on joining the scheme. The cost of compliance through membership of the approved body was greater than expected and involved more than contributing a membership fee. However, the most compelling explanation is the Irish packaging voluntary agreement failed to engage stakeholders from an initial base of strong stakeholder support. The most serious lack of engagement was with consumers. The case study of the Irish packaging voluntary agreement demonstrates that consumers need to be actively engaged in the implementation of a voluntary approach. This engagement requires a co-ordinated effort from policy makers, enforcers, the approved body and participating companies. This involves selling the voluntary agreement to consumers. Part of this selling of the voluntary agreement includes education with a particular focus on school-goers. Using the green dot symbol on products may assist in this engagement process. Locking consumers through active participation in a voluntary approach will lead to real tangible and intangible returns for stakeholders, thereby propelling its development and ultimately sustaining it over the long term. This did not happen in the Irish case and has resulted in low participation levels among Irish firms. More importantly it highlights how perceptive and strategic companies really are in the way they manage their environmental risks and liabilities. Consequently, policy makers and society in general may realise in the medium term that environmental voluntary approaches are a possible Trojan Horse. Only the next few years will tell if this is the case for Irish environmental policy.

Future Research Challenges

The literature on voluntary approaches is still emerging and the assessment of voluntary approaches has tended to be case-study-based rather than empirical. However, there is an empirical need to assess the performance and effectiveness of voluntary approaches using the criteria of environmental effectiveness, cost-effectiveness, stimulation of innovation, viability and feasibility, and competition using more longitudinal studies and a combination of research methodologies.

Other aspects of voluntary approaches need to be researched in order to understand the dynamics involved. The most critical of these is to further explore and investigate the behaviour of the firms once they become members of a voluntary approach and this includes free riders. Much of the research to date has focused on evaluation criteria, benefits and costs, the types of VA and their contents. Exploring the behaviour of the firm during this period and insights gained from a combination of research methodologies will ultimately assist policy makers and may ensure that voluntary approaches remain a credible part of the environment policy instrument fabric used by regulators.

Another issue for future research is the cultural dimension of voluntary approaches. From the limited evidence to date some countries have adopted voluntary approaches as the main policy instruments to regulate environmental behaviour, other countries have been more reluctant adopters. An exploration of the commonalities in relation to the cultural dimension would add to the existing body of knowledge, particularly in relation to formulation and successful implementation of voluntary approaches. Such a research focus may yield culture bound or transferable issues that may ensure a more successful application and use of voluntary approaches.

Finally, the issue on how to integrate voluntary approaches with other policy instruments and the impact this integration has on competition and environmental performance needs to be researched further.

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Spamming and Scamming: The Real Picture!

AIDEEN KEANEY* AND DAN REMENYI[1]**

Derivation of Word Spam

This paper discusses the current phenomenon of spam, assessing its cost to organisations and describing some of its impact on the University of Dublin. It also argues that more research needs to be undertaken by academics in order to combat this phenomenon.

The history of the word "spam" (which is said to be derived from Spiced Pork And haM) dates back to 1937 when a new luncheon meat was first introduced into the market. It was a breakthrough product at that time as it gave apparently "fresh" meat that didn't need the expense of refrigeration. It was hardly a culinary delight but then fresh meat was not widely available. In fact in those days food for most people was not up to much. Then when the Second World War began products like spam came into their own both for the civilians and the military. Made of a mixture of chopped pork shoulder and ham, spam was at this time an important part of many diets. But in the years that followed the Second World War, when food production not only came back to normal, but began to flourish and produce the great variety of high quality products we have grown accustomed to today, spam became a largely unwanted commodity in our society – at least in the western world. As the aphorism goes, "every dog has its day", and by the 1960s spam's day had largely come and gone. Yes, you can still find spam on the shelves of some supermarkets but it is not a highly sought after product.[2]

However, we were not yet finished with the word spam. The Encyclopaedia Britannica reminded us that the word spam was used in a *Monty Python's Flying Circus* sketch written in 1969, when chanting the word spam drowned out the other dialogue.[3] Clearly it is an easy to pronounce monosyllabic term, which sort of rolls off the tongue and so uses other than describing a meat product were to be found for it.

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* *School of Systems and Data Studies, Trinity College Dublin, e-mail: aideen.keaney@tcd.ie*
** *School of Systems and Data Studies, Trinity College Dublin, e-mail: dan.remenyi@tcd.ie*

Definition of the Word "Spam"

Today the word spam has been taken over by the users of the Internet to refer to unsolicited commercial e-mail (UCE) or unsolicited bulk e-mail (UBE). However, its definition is not so clear-cut. One possible definition is a false commercial offer made by e-mail; another popularly understood definition has evolved to include all unwanted e-mail. Mulligan (1999) defines spam as "huge volumes of unsolicited messages, irrespective of content". *The New Penguin Dictionary of Computing* (2001) defines spam as "the sending of an unrequested and unwanted e-mail to multiple recipients, usually for the purpose of advertising". There are a number of additional nuances here, which need to be considered. Unsolicited e-mail from charities seeking funding for relief projects may not be regarded by some recipients as spam. Information which the receiver finds useful from sources such as the publishers of e-zines for example may also not be regarded as spam. So clearly what constitutes spam for one individual may not be spam for another. For now, there is no distinction between the unsolicited e-mails that are called spam and those that might be considered a legitimate marketing strategy (Schaub, 2002). For the purposes of this paper, we will define spam as "the sending of an un-requested and unwanted e-mail to multiple recipients".

There appears to be approximately 200 major spam-sending organisations. This estimate was supplied by Steve Linford of Spamhaus at the Spam Summit held on 1 July 2003 by the All Party Internet Group of the UK House of Commons, which is referred to as APIG. According to Linford, these organisations are increasingly operated by individuals who have no regard to any laws or regulations. He claims that those working against the spammers are often harassed and threatened. He believes that the spam problem is likely to grow at exponential rates over the next few months and years.

User Attitudes to Spam

Spam represents the largest growing sector of Internet activity. Spam used to be thought of as rather harmless, but if this ever was really the case, it is no longer so. Spam is now a hazard and is increasingly seen as such. Users can have a strong emotional reaction to spam. Many users are highly annoyed by these constant, uncontrollable intrusions to their work. Add to this the sometimes offensive and fraudulent nature of spam and it is not surprising that the annoyance caused by these unwanted messages can be a greater distraction than the intrusion itself. Adam (2002) states that the rapid increase in the availability of e-mail has resulted in "e-mail overload": users now have cluttered in-boxes containing hundreds of messages, including outstanding tasks and partly read documents. Spam can now be added to this "overload".

Users can also feel that spam threatens their privacy. Fahlman (2002) states that a concern for most of us is the fear that our personal information will fall into the hands of unscrupulous marketers, who will then intrude upon us with unwanted calls and messages. Han and Maclaurin (2002) found in a survey of attitudes to online privacy that a number of respondents labelled spam as a major privacy issue.

One danger that has been articulated is that users may feel so threatened by spam that they may lose trust in technology and turn away from the central application of the Internet Revolution e-mail.

Nature of Spam

So exactly what is this menace that has the potential to diminish our use of e-mail? We start by examining the different types of spam. In 2003, the USFTC (Federal Trade Commission) carried out a study analysing the contents of a random sample of spam drawn from a variety of sources available to FTC staff. They found that messages fell into eight general categories. These are shown in Figure 2.1.

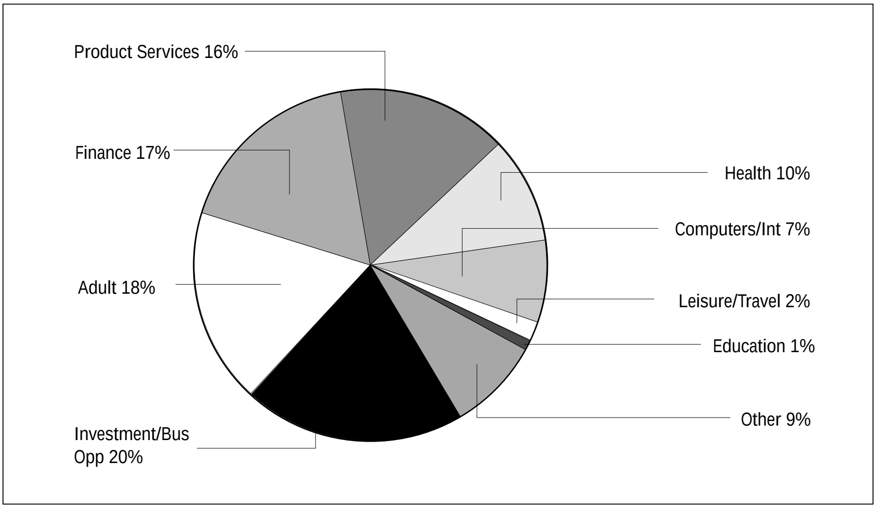
Figure 2.1: Eight Categories of Spam Offers as Defined by the US FTC, 2003

Type of Offer	Description
Investment/ Business Opportunity	Work at home, franchise, chain letters etc.
Adult	Pornography, dating services etc.
Finance	Credit cards, refinancing, insurance, foreign money offers etc.
Products/ Services	Products and services other than those coded with greater specificity.
Health	Dietary supplements, disease prevention, organ enlargement etc.
Computers/ Internet	Web hosting, domain name registration, e-mail marketing etc.
Leisure/ Travel	Vacation properties, etc.
Education	Diplomas, degrees, job training etc.
Other	Catch-all for types of offers not captured by specific categories listed above.

Figure 2.2 describes the prevalence of each of these different types of spam. It can be seen that the so-called Investment/Business Opportunity, Financial and Adult offers accounted for over half of all messages.

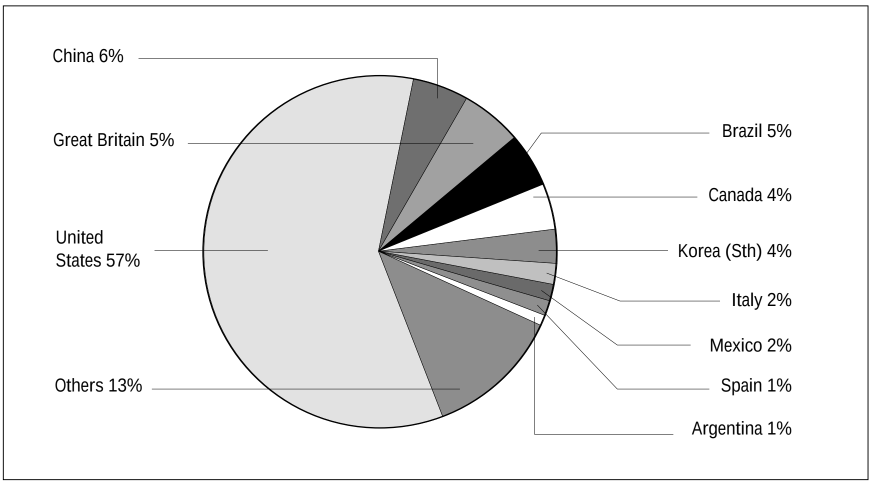
The country of origin of these spam messages is also interesting, as shown in Figure 2.3. In March 2003, the US accounted for nearly 60 per cent of all spam activity.[4] Adding in Canada and Europe, we can account for 70 per cent of the origins of spam.

Figure 2.2: Offers Made via Spam*



*FTC, 2003

Figure 2.3: Spam Activity by Country of Origin*



* MessageLabs, March 2003

Some sectors of the economy are more vulnerable than others to the threat of spam. Figure 2.4 shows a distribution of spam in December 2003. It reflects for the European region, the percentage of e-mail in each sector containing unwanted content.

Figure 2.4: Market Distribution of E-mail Spam*

Sector	Percentage of Spam E-Mail per Sector
Accommodation and Catering	67%
Education	63%
IT Services & Telecommunications	63%
Administration and Support	62%
Health Care	61%
Chemical & Pharmaceutical	56%
Real Estate	54%
Professional Services	48%
Non-Profit	46%
Retail	46%
General Services	45%
Recreation and Leisure	43%
Manufacturing	42%
Marketing, Media and Publishing	42%
Agricultural	36%
Finance, Banking and Insurance	35%
Wholesale and Distribution	34%
Transport and Utilities	23%
Government and Public Sector	22%
Building and Construction	17%

* MessageLabs, December 2003

SCAMMING

The FTC (2003a) currently estimates that in the US 70 per cent of spam is, in terms of current law, illegal. Attempted fraud is one of the more popular illegal spams. Probably the best known are the Nigerian e-mail scams where some person, often purporting to be the son or daughter of a famous but now dead politician or military figure, has an amount of money – often tens or sometimes hundreds of millions of US dollars (the largest sum we have seen was US$500,000,000 – half a billion dollars), which for some reason they need to launder and if we send them our bank account details they will lodge this money in our bank account. These people say that they have found our name in a book on the shelf of their deceased father or they got our name from their Chamber of Commerce. One colleague has received an e-mail from a swindler who had designated himself as The Reverend, to the effect that the Lord had directly given him our colleague's name and e-mail address and had recommended him as an extremely honest and trustworthy person. Another colleague was very amused to see that the Lord was an e-mail user and that his name was already in the Lord's directory and with such positive connotations. What interests us is the sheer gall of these swindlers and the fact that this activity has been increasing in intensity since we received our first e-mail invitation to swindle the Nigerian Government three years ago.

Usually the fraudulent offer is that you will retain 20 per cent of the capital transferred for your trouble. We do not know anybody who has attempted to collaborate with these swindlers, but we do know someone who says that a friend of his did. Apparently this friend of a friend sent off his details and a few days later was told by the original e-mailer that the funds were ready for transfer but that a difficult bank manager in Nigeria was delaying the process. He was then told that a payment of US$25,000 would speed up the bank manager considerably. The money was sent. A week later another e-mail informed him that there was now a difficult customs and excise officer who was holding up matters and that a US$20,000 would expedite this link in the money transfer chain. Time went by and more and more awkward characters, all of whom were delaying the transfer, crept out of the woodwork. We do not know how much money this person sent off in the hope of making his millions. There was a case reported in the US in 2002 where a woman embezzled over a million dollars from her employers just to feed one of these e-mail swindlers in the hope that they would eventually make her "rich quick".[5] Instead of getting rich she went to jail. It has been said that every day of the week there are people waiting in the lobbies of London hotels for the "big" cheque to be handed over to them by their Nigerian benefactor: all they get is the bill for the coffee they consume while waiting. The UK's National Criminal Intelligence Service[6] states that frauds similar to this committed by West African crime groups is estimated to cost the UK at least £3.5 billion a year.

Besides eliciting money it also appears that the swindlers are involved in identity theft. Hinde (2002) states that this crime is one of the fastest growing crimes in the US. Identity theft refers to circumstances whereby professional fraudsters acquire sufficient information about an individual to be able to access their bank accounts and lines of credit and thus to help themselves to cash and credit and other facilities to which they are not entitled. In many cases the individual whose identity is stolen becomes blacklisted for exceeding credit limits and generally appearing to be financially irresponsible. Identity thieves also break the law in other ways using the name of their victims and this can result in considerable personal inconvenience. In 2003 in South Africa, Stephen Bond, a retired Englishman on holiday, was actually imprisoned at the request of the FBI as a result of his identity being stolen.[7] The FTC recently released alarming figures about identity theft. More than 27 million Americans have been victims of identity theft over the last 5 years, including 9.9 million in the last year. Losses attributed to identity theft totalled nearly $48 billion for businesses in the last year, while consumer victims reported $5 billion in losses.[8]

Another interesting scam is the invitation to collect your winnings from the lottery. You are advised by e-mail that you have won a lottery for which you have not purchased a ticket. A typical message reads:

> You are allotted to ticket number 3 - 0382 - 8642 - 032 , with serial number FV-UX654 drew the lucky numbers 453 - 7333 - 7042 - 992 , and consequently won in category C. You have therefore been approved for a lump sum pay of 750,000.00 Pounds Sterling in cash credited to file REF NO. SLP/026-5B8C8N85074, This is from total prize money of 11,250,000.00 Pounds sterling shared among the international winners in the category C. All participants were selected through a computer ballot system drawn from 30,000 names from Australia, New Zealand, America, Asia, Europe and North America as part our International Promotions Program, which is conducted annually.[9]

When the prize was claimed from this source the following message was e-mailed:

> Thank you for your claims submission. Find attached is your claims form. We will be processing your claims immediately with this form. You are required to forward 750.00 Pounds (SEVEN HUNDRED AND FIFTY) for our processing charges with the UK Gaming Commission and The Lottery Board, which represents 0.1% of your total winnings. This is mandatory, as it will enable us in a timely manner, allocate your winnings with our issuing finance house, for them to immediately forward your winnings to your nominated account.[10]

It would be very interesting to know how many people forwarded a cheque for £750. This is such a serious problem by both e-mail and postal mail that the UK government now has a TV advertising campaign "Prizewinner or *prize fool*?" [11] warning people against these scams.

We have not attempted to supply a definitive list of scams presented in spam but rather to highlight some of the more frequently offered "financial opportunities".

There are other potentially criminal activities being offered, such as the provision of cigarettes at prices that suggest they are probably counterfeit. There are also "real" Rolex watches being offered for US$65. You can have US$200 for free by signing up with an online casino. In September 2003, we saw for the first time direct offers of hard drugs and undisguised child pornography.

Stem this Tide of Spam

To stem this tide of spam, many companies are installing anti-spam filtering software. This software tries to identify spam and deletes it or moves it to a junk folder. To bypass these filters, the spammers are becoming more sophisticated and resorting to more elaborate tricks to get their message through. One way they do this is by using a variety of social engineering methods to induce the recipient to open and read the content of the message being sent. Kevin Mitnick (2002), probably one of the most infamous social engineers, defines social engineering as "using influence and persuasion to deceive people by convincing them that the social engineer is someone he is not, or by manipulation. As a result, the social engineer is able to take advantage of people to obtain information with or without the use of technology." To achieve this, spammers often send spam from an e-mail address that is spoofed or forged, concealing the identity of the sender. The e-mail will be sent from an address that you will recognise. One common example is that the sender comes disguised as a corporate network administrator with the subject line: "Your mailbox is over its size limit."[12] You are then asked to load some software to clear your mailbox and in so doing you actually give the spammer full access to your PC. A more recent trend that spammers are using to hide their identities is the use of "open-proxy"[13] machines. This is an approach that has been used by hackers and virus-writers for some time.

The spammers' "compendium of tricks" for getting access is large and growing. Some can be extremely simple such as misspelling keywords that an anti-spam package would be looking for, for example "V1agra". Others are much more technical in nature.

All in all, this means that spammers are generally one step ahead of the software and technical solutions. Cranor and LaMacchia (1998) carried out a six month study analysing the performance of anti-spam software filters in AT & T and Lucent Technologies. They found that the effectiveness of their filters had degraded considerably during the months of the study due to spammers changing tactics. It requires considerable effort to keep up with the spammers. This ongoing struggle with spammers is sometimes referred to as an intellectual arms race and, like the war on drugs, it is not likely that it can be won – the amount of talent spammers can buy is certainly a match for the developers of the spam filters.

The Economics of Spam

Of course spam is much like unwanted mail in the postal system, unwanted faxes or unsolicited phone calls, but it differs in one major way: virtually everyone but the spammer bears the cost of this nuisance.

Once the spammer is set up there is little or no cost to despatch a million e-mail messages. Conversely, using printed commercial brochures there is the cost of creating, printing and mailing and this is borne by the sender, not the receiver. According to Mulligan (1999), spam is very much like receiving unwanted mail with postage due!

Figure 2.5 shows the costs associated with sending printed mail shots and sending spam e-mail.

Figure 2.5: The Economics of Spam

PRINTED MAIL SHOTS	
Cost:	25 cents per piece or more
Response rate:	3% or less
Cost per response:	$8 or more
SPAM E-MAIL	
Cost:	one hundredth of a cent or less
Response rate:	0.25% or less
Cost per response:	4 cents or less

Source: www.computerworld.com

Even a tiny percentage in uptake can generate substantial income for spammers. A recent article in the *Economist* (2003) suggests that a response rate as low as one in 100,000 justifies many bulk mailings, as their overheads are minimal. Wood (2003) states that one million e-mail addresses can cost as little as 63p and one million spams take about four hours to send by dial-up at a cost of only £2.40. Of course it is very unlikely that any spammer would be using a dial up line and thus even this cost is not likely to actually be incurred. So it is clear that the economics are all in favour of the spammers.

In Figure 2.6 Schwartz and Garfinkel (1998) identify four separate groups that suffer at the hands of spammers and suggest how the spam actually adversely affects the organisation.

Figure 2.6: Groups that Bear the Cost of Spam*

Group	Nature of Nuisance
Users	For users, there is the waste of time spent sifting through and deleting unwanted messages. There is also the danger that a user may be drawn into a spam offer and thus waste even more time. If a user is using a dial-up connection, there can be an additional cost just downloading these unwanted messages. There is a danger that genuine e-mails can get lost amongst the spam. For some of the newer spam solutions, there is also an overhead in maintaining filters and white lists. There can be a perceived privacy intrusion. (Gopal, Walter et al., 2001). There is also the unsuitable and unsavoury nature of some of these e-mails.
Organisations	Companies have to increase the capacity of their mail servers and network infrastructure to deal with these additional mails. Companies also invest time and effort into installing anti-Spam software that tries to counteract this problem. Much of a systems administrator's time can be spent dealing with this

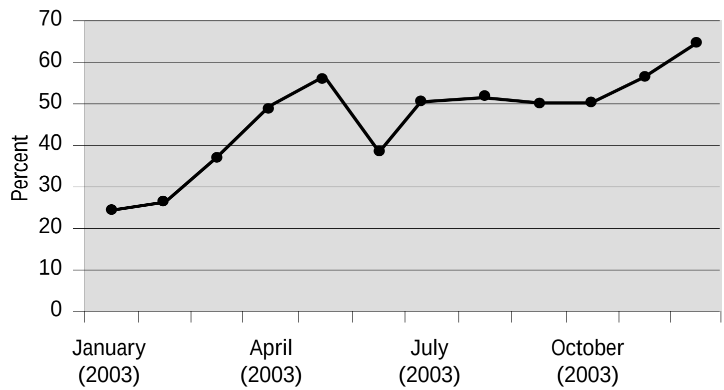
	problem. Another additional cost is the support/helpdesk facilities that are needed to deal with user complaints.
Innocent bystanders	Spammers often relay their messages through other computers on the Internet, often without the knowledge of the owner. This constitutes a theft of service. It can also result in problems for the unsuspecting relay as people mistakenly think that the relay is the spammer.
ISPs	They bear increased storage, transmission and computing costs. In excess, it can lead to denial of service for other e-mail and network traffic. (Denning, 1999). Recently, an Irish ISP fell victim to serious problems with spam. The sheer volume of spam being relayed through the organisation overloaded internal systems and caused an outage.

* Based on the Schwartz and Garfinkel (1998) taxonomy

Quantifying Spam

It is clear that spam is a very profitable business for those engaged in it, but just how much is it costing business and the rest of society? Before we can answer that we need to try to ascertain how large this problem actually is. MessageLabs is a leading provider of managed e-mail security services to businesses worldwide. They scan millions of e-mails everyday (in December 2003 they scanned 463 million e-mails). Their findings (see Figure 2.7) over the last year and in particular the first few months of this year have been interesting (Wood, 2003).

Figure 2.7: Percentage of Spam in Mail, January 2003 – December 2003*[14]



* MessageLabs

The latest statistics for other spam filtering companies confirm this trend. In May 2003, SpamTrap (www.spamtrap.net.au) recorded that 55.8 per cent of all customers' e-mail was spam. If these trends continue, there could be a 600–700 per cent increase in spam growth year to year. Care has to be taken when interpreting statistics from companies such as these. These figures may not be representative, as the incidence of spam is almost certainly higher amongst the clients of spam filtering vendors than other companies. It is clear, however, that the problem is large and growing.

How much does Spam Cost Organisations?

As previously shown in Figure 2.6, there are four main ways in which spam can incur costs. The first is the loss to the user in productivity, personal communication costs and the costs associated with maintaining spam filters. In addition, it is worth reflecting on how much genuine e-mail is lost in the volumes of spam. The second cost is to the organisation in relation to upgrading the e-mail infrastructure to cope with the additional burden of spam. There is also a burden on its helpdesk/support facilities. The third cost is to innocent bystanders (using open relays) and comes into effect when an organisation's computer's response is degraded by unauthorised traffic. There is a knock-on cost when the innocent bystander is accused of being the spammer and their e-mail facilities are blocked.[15] A fourth cost is borne by ISPs. They have similar costs to businesses but on a far larger scale as they have a much higher throughput to deal with. They incur considerable costs in blocking spam. AOL has blocked 2.3 billion spam e-mails in the last year.

Ferris Research[16] (2003) estimate that spam will cost US corporations more than $10 billion dollars in the coming year. They estimate that, on average, it takes 4.4 seconds to deal with a message, this equates to $4 billion in lost productivity for US businesses each year. Another $3.7 billion is a result of companies having to buy more powerful servers and more bandwidth as well as diverting staff time. The rest of the $10 billion can be attributed to companies providing help-desk support to users. This equates to a cost of $14 per user per month.

The worldwide costs are of course higher. A similar study by The Radicati Group[17] projects the worldwide losses for companies, in terms of additional servers they have to deploy and manage to process spam, will amount to $20.5 billion in 2003. The European Union estimate that spam will cost $8 Billion in bandwidth costs alone worldwide in 2003.

The predicted cost of spam to organisations does vary quite considerably in each of these studies. Figure 2.8 looks at the yearly costs of spam per employee as reported by a selection of studies.

The difference in suggested cost can be attributed to how sophisticated the research was for each report. An estimate of the cost of spam to an organisation may focus on a number of issues such as: the volume of e-mail sent and received each day; the volume of spam; the time spent dealing with spam; the percentage of bandwidth used for mail services; the additional IT infrastructure needed to cope with spam; helpdesk/support facilities; employee numbers; average hourly salary per employee; work hours.

Figure 2.8: Yearly Cost of Spam per Employee as Reported by Various Studies

Study	Yearly cost of Spam per Employee	Attributed to:
Nucleus Research Inc. July 2003	$874	Loss of user productivity, based on 1,000 employees with average earnings of $30 per hour
Ferris Research, January 2003	$168	Loss of user productivity & IT and helpdesk costs
Computer Mail Services – online calculator[18]	$150	Loss of user productivity based on 1,000 employees with average earnings of $30 per hour and receiving 10 spam messages a day
Radicati Group, June 2003	$49	Loss of user productivity based on 10,000 employees

Of course, the real cost of spam needs to be assessed in terms of the actual cash dispersed by the organisation as a result of the spam attacks; therefore, incorporating notional amounts for staff time and cost is often highly questionable.

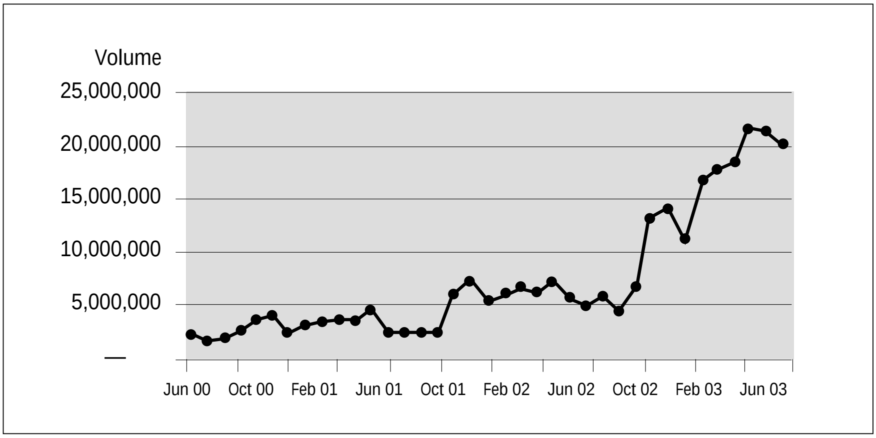
Furthermore, users do not always just delete these unwanted mails, they often talk to their colleagues about these spam messages and sometimes exacerbate the situation by passing these messages around. In some instances users can be drawn into purchasing the products and services advertised by spam and some of these are scams.

There is also a less tangible social cost to spam. A material portion of spam is frequently offensive in nature. While this can be quite disturbing for some adults, it can actually be damaging to children, and parents are now restricting children's use of e-mail.

University of Dublin: The Trinity College Experience

The University of Dublin is located in the centre of the city and is most commonly known as Trinity College Dublin (hereafter referred to as TCD). It is Ireland's oldest university, dating back to 1592. TCD has approximately 20,000 e-mail users and receives up to 900,000 e-mails a day. Figure 2.9 shows the average daily volume of e-mails to and through TCD.

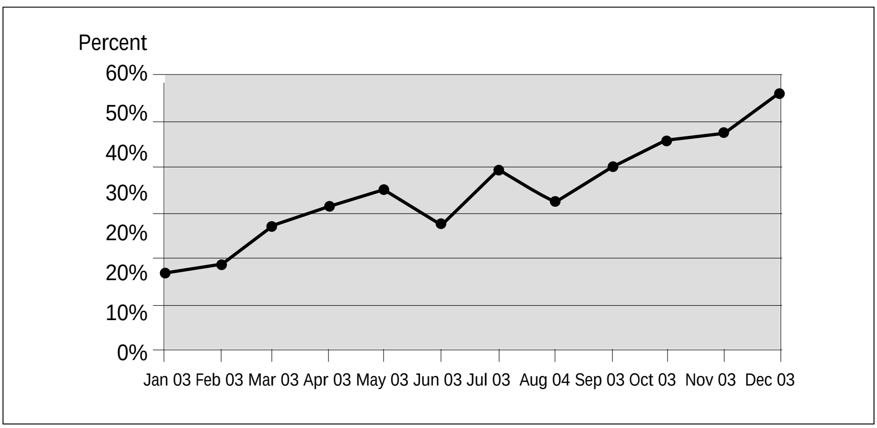
Figure 2.9: Monthly Volumes of E-Mail to and through TCD, June 2000 – June 2003



Source: IS Services, TCD

In conjunction with the increased volumes of e-mail has been the increase in the amount of spam. The issue of spam was initially identified in the autumn of 2001 and since then has become an increasing problem. Figure 2.10 shows the quantity of spam received each month by the IS services manager. This is only the experience of one user who has kept details of his level of spam receipt.

Figure 2.10: Monthly Percentages of Spam for IS Services Manager January 2003 – December 2003



Source: IS Services, TCD

It is clear from Figure 2.10 that the amount of spam being received by the IS services manager does follow the trend as shown by MessageLabs in Figure 2.7. However, the percentage of spam for the IS services manager are lower and hit a peak of 56 per cent in December 2003. For the university, as a whole, it is estimated that on occasions 85 per cent of e-mail arriving is spam. However, the overall estimated daily average of spam is approximately 45 per cent.

The spammers are harvesting the university's e-mail addresses from a number of sources: old usenet (bulletin board) postings; membership of mailing lists; opt-in web pages and opt-out e-mails. The longer established e-mail accounts get more spam. More recently, spammers have been using brute force attacks to reach users. The university receives 500,000 brute force attacks a day. A brute force attack is a "Dictionary attack". The spammer simply sends to a variety of common names hoping to find them in this particular domain. Another recent trend is for spammers to take advantage of read-receipt functionality in e-mail programs. This function automatically sends an acknowledgement to a spammer informing him or her that you have read their e-mail. They therefore know that they have found a valid address. Users may not know that this facility is installed and running in the background.

The Damage Done by Spam

Spam has caused TCD an increasing number of problems, which may be categorised as follows:

1. the annoyance factor caused to staff and students in receiving this unwanted mail
2. the loss of real e-mail among the spam
3. the cost of needing bigger personal systems to cope with the greater through put due to the spam
4. the problem of some of the html e-mail actually containing illegal photographs[19]
5. the university may also have a legal liability if its staff and students are exposed to certain unsuitable e-mails
6. the potential for staff and students becoming involved in some of the scams presented in the spam notices.

In addition to these problems and potential problems there have also been two spam-based denial-of-service attacks on the university's e-mail system in the last year. One occurred when approximately 10 million e-mails were sent to TCD in one weekend. The e-mail infrastructure was unable to cope with this volume of e-mail and this in turn had knock-on consequences for two other universities who were holding some of these mails waiting for the TCD e-mail system to come back online.

It is generally thought that the biggest cost to the university has been the loss of productivity. As said before, there are 20,000 e-mail users and if each user spends a conservative estimate of 5 minutes a day clearing unwanted mail, then over a year the university has wasted approximately 608,300 hours dealing with spam. If we narrow this down to the staff members with active e-mail accounts of which there are 2,800, the wasted time is 85,200 hours per year. Using an eight-hour day and the average wage, the university is incurring spam-related losses of €1 million.[20]

Of course TCD's problems are in no way unique and the difficulties described here are experienced by many other universities and other organisations around the world. Perhaps the situation in TCD is exasperated by the fact that there is an attitude in TCD that blocking spam is in essence a type of censorship.

Possible Solutions

It is not the intention of this paper to address the solution to the spamming problem in detail. However, it is necessary to say that it is clear that spam is a major problem that is on the increase. It is a considerable annoyance for organisations as they bear the majority of the costs related to this activity. As already mentioned, the cost to the spammers relative to the receivers of the spam is minimal.

The solutions proposed to date are to:

1. install more sophisticated hardware and software filters to protect organisations from spam
2. educate users to avoid doing anything that may help or encourage spammers;
3. introduce legislation to make spam unlawful[21]
4. change the charging arrangements for e-mail.

It is unlikely that any one of these alone will solve the problem of spam. However, as well as installing hardware and software filters it is incumbent upon a university to ensure that it provides extensive education on the problems and dangers to its members becoming involved with any offers presented by spam. Scams are not always all that obvious to young and inexperienced individuals. The principle of *in loco parentis*[22] alone makes this an essential aspect of why they need to combat spam and scams.

But it is clear that the growth in spam cannot be allowed to continue. Sooner or later major action will have to be taken on this issue and, whatever happens, it will no doubt involve additional controls and thus expense. These controls may require government and international agencies to collaborate. These organisations would also have to work together if charging per unit e-mail despatched was to be globally introduced. After all, the Internet is a global issue and it will require global regulations to actually ensure that it is not being attacked and abused. There are certainly interesting times ahead and the sooner a multilateral debate on how to establish policy which will contend with spam is initiated the better. It always takes a very long time to establish a policy where there are many stakeholders and this is an issue that affects a large number of stakeholders.

Future Research

Despite the increasing menace of this problem there is surprisingly little research related to spam, or the scams offered in the spam, published in the IS management journals. This subject does not appear to have been taken up in any material way. This is despite the fact that the subject has a lot to offer from an intellectual point of view. There is the whole range of policy with regards to actual and potential legislation and codes of practice. There are the management issues, which range from how to ensure organisations are not subjected to fraudulent practices as a result of spam and scams, to the technical issues involved in information systems security management. There are of course articles mostly written by journalists on this subject published in the popular press but in general they are not well focused nor do they present their arguments rigorously. The spam and scam subject needs much more rigorous attention. There are many policy issues to be investigated and aired and there are many interest groups involved. There are numerous opportunities to consider how algorithms or heuristics may be improved to foil the effectors of spammers. And the results need to be given a high degree of visibility.

If satisfactory progress is to be made in the struggle against spam then the IS academic research community needs to become more involved in this area of study. To date, the little academic literature in this field has focused on the computer science research aspects of hardware and software issues related to spam, and not on the social and management issues.

An Anti-Spam Research group (http://www.irtf.org/asrg) has been set up to understand the problem and collectively propose and evaluate solutions to the problem. IS academics could actively contribute to the research group by addressing issues such as:

1. Organisation problems faced due to spam
2. ISP problems faced due to spam
3. Defining spam
4. Privacy considerations
5. Deployment considerations for solutions being proposed
6. Quantifying and categorising spam
7. Identifying scams
8. Disseminating information about scams
9. Developing requirements for solutions
10. Developing a taxonomy of spam solutions
11. Evaluating proposed solutions
12. Developing best practices documents.

Each of these areas offers major research opportunities and the sooner the academic community takes an active interest in spam and scamming as a research topic the better. Rigorous research findings would enable well conceived and well understood policies which have a good chance of success to be put in place at the national level and at the corporate level too. It would also provide individuals with a better understanding of what is actually happening and how they need to be involved in the struggle against spam.

We will continue with our research work on spam at TCD.

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1 The authors would like to thank the IS services manager in Trinity College Dublin for providing facts and figures used in this paper.

2 For more details of the meat product from which the name has been borrowed see http://media.hormel.com/anm/templates/spam_museum.asp?articleid=8&zoneid=11. In fact according to http://www.safetyalerts.com/recall/f/02.2/f0001930.htm in "Anderson, IN (SafetyAlerts) - US Department of Agriculture's Food Safety and Inspection Service said that Mr. Pizza Inc. is recalling approximately 210 pounds of fully cooked, ready-to-eat pork luncheon meat that may be contaminated with Listeria monocytogenes."

3 There is much more about this subject on the web beginning with http://www.stmoroky.com/reviews/films/hlygrl.htm

4 Current and upcoming legislation in the USA is thought to be likely to move Spammers out of that country and into the developing world. It was suggested at the APIG Spam Summit on July 1, 2003 that many of the illegal child pornographic sites are being located or relocated in parts of the former Soviet Union.

5 See http://www.thirdage.com/news/archive/990726-03.html?std and http://www.freep.com/news/locoak/checks21_20020921.htm for details of these types of frauds.

6 Details of the scam and a Nigerian fraud e-mail gallery is available at http://www.ncis.gov.uk/waocu.asp

7 See http://www.timesonline.co.uk/article/0,,1-591965,00.html

8 See http://www.csoonline.com/metrics/viewmetric.cfm?id=602

9 The detail of a discussion between the Spammer and someone "interested" in collecting the money is provided at http://www.tactics4wealth.com/

10 The typing errors have been deliberately not corrected.

11 Details of the ad campaign are at http://www.dti.gov.uk/ccp/scams/page2.htm#prizedraws

12 See http://news.zdnet.co.uk/story/0,,t269-s2108342,00.html

13 A proxy server is a computer that is used to consolidate Internet access for an organisation. These proxies can sometimes be mis-configured and can be left "open" or insecure and anyone on the Internet can then use it as a relay for their own anonymous Internet activities.

14 The drop in the percentage of Spam in mail in June 2003 may be attributable to the start of the summer holiday season or it could possibly be due to new anti-spam measures such as proposed law suits by Microsoft.

15 With more and more blacklists being created this is an increasing problem which causes interruption and loss of business to many innocent e-mail users.

16 Ferris Research is a San Francisco-based market and technology research firm that specialises in messaging and collaboration technologies, such as e-mail, instant messaging, wireless handheld connectivity and virus and spam control.

17 The Radicati Group publishes extensive market studies analysing market size, trends,

forecasts, as well as offering competitive product and vendor intelligence. (www.radicati.com)

18 http://www.cmsconnect.com/Marketing/spamcalc.htm

19 At the APIG Spam Summit held on July 1, 2003 it was stated that between 75 and 85 new pornographic websites supplying photographs of sexual explicit situations in which children are involved are set up on the web each week. Spam is then used to attract visitors. Pornographic photographs are actually e-mailed.

20 As we mentioned above this type of figure has to be viewed with caution, as the university is unlikely to have to spend anything to make up this annoying loss of staff productivity. Nonetheless we regard this type of calculation worth doing if for no other reason to give some tentative substance to the annoyance caused by Spam. The real cost to the university is incurred in improving the e-mail infrastructure to cope with the additional e-mail load and installing software to detect Spam.

21 As implied above this will probably only drive spammers to set up in countries where these laws don't apply.

22 *In loco parentis* translates for the Latin as "In the position or place of a parent". This refers to the fact that the university has some responsibility for its students' welfare over and above the purely academic issues. This was seen as a very important issue in former times when young people only attained their majority at the age of 21. In today's world when young people attained their majority at only the age of 18 the issue is not as important. There will be few students who will be under 18 years of age but they need to be catered for.

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Have Total Quality Management, Business Process Re-Engineering and the Learning Organisation been Replaced by Knowledge Management?

An Exploration of the Meaning, Popularity and Practical Relevance of Late 20th Century Management Theories

SHARON RYAN* AND JOHN HURLEY**[1]

INTRODUCTION

Total Quality Management (TQM), Business Process Reengineering (BPR), the Learning Organisation (LO) and Knowledge Management (KM) are just four of many management techniques that emerged in the latter part of the 20th century. All four techniques have been called fads or fashions, by definition easy to dismiss with each new idea replacing the last, KM being the latest technique, subsuming the LO and superseding TQM and BPR. However, just because these initiatives are labelled as fashions, this does not mean that they do not have enduring effects. "Management fashions are not cosmetic and trivial. Management fashions shape the management techniques that thousands of managers look to in order to cope with extremely important and complex managerial problems and challenges" (Abrahamson, 1996: 279). In a turbulent and changing world there is a "desperate quest" for new approaches to management (Eccles and Nohria, 1992: 2). This desperation has led to dissatisfaction with existing paradigms of management and the search for new paradigms (Hamel and Prahalad, 1994).

This paper examines the fashion metaphor as a descriptor for the growth and decline of management initiatives. In addition, the characteristics and lifecycles

* *Business School, Dublin City University.*
** *Business School, Dublin City University.*

of fads and fashions are outlined. The four discourses (TQM, BPR, LO and KM) are compared and discussed in light of the fashion metaphor, with particular emphasis on the origins of each technique, problems of definition and reasons for decline in interest. Finally, a bibliometric analysis is employed to evaluate the adherence to the fashion metaphor of the four management approaches and the results are discussed with respect to existing theory.

Are TQM, BPR, LO and KM Fads, Fashions or Enduring Classics?

In order to answer this question a distinction needs to be made between classical management theories and management theories that adhere to the fashion metaphor. Classical management theories such as division of labour have enduring qualities that are applicable and repeatable. Classics emerge from practitioners' response to social and economic challenges and are "complex, multifaceted, and applied in different ways to different businesses" (Miller and Hartwick, 2002: 27). The four management theories under discussion have arisen in response to social and economic challenges but the main exponents of these theories are "fashion setters" and their place in management history as classics is questionable.

The Fashion Metaphor

The fashion metaphor is often used to describe the adoption, diffusion and decline of management ideas, with the terms fads and fashions being used interchangeably. However, there is a subtle difference between the two: fads peak and decline within five years, whereas management fashions are more enduring, briefly showing signs of maturity before declining (Ponzi and Koenig, 2002: 2). The two terms will be used interchangeably in this paper.

Fads and fashions are developed by fashion setters who, generally speaking, are consultants, management gurus, business schools and business mass-media publications (Abrahamson, 1996). Others hold that it is the adopters themselves that create the fads that in turn influence the management rhetoric (Carson, Lanier, Carson and Berkenmeier, 1999) or at least play a part in the diffusion of fads (Newell, Robertson and Swan, 2001).

Characteristics of Fads and Fashions

Kieser (1997) outlined two main characteristics that define a fashion. Firstly, the "new" management idea is presented as a radical departure from current practice and so is not merely "old wine new bottles". Secondly, the idea is presented as an imperative to prevent disaster. In an article in the *Harvard Business Review*, Miller and Hartwick (2002) presented a comprehensive list of qualities that typify fads incorporating Kieser's characteristics (Table 3.1). These authors contend that the characteristics of fads, which allow them to become so popular and diffuse so rapidly, are also their undoing.

Table 3.1: Characteristics of Fads

Characteristic	Explanation
Simple	Easy to understand and communicate with buzzwords and acronyms.
Prescriptive	Tell managers what to do which allows misinterpretation to occur.
Falsely encouraging	Promise outcomes such as effectiveness and performance.
One-size-fits-all	Universal relevance that apply to almost any industry organisation or culture.
Easy to cut and paste	Can be partially applied, certain fad features can be grafted onto standard operating procedures.
In tune with the Zeitgeist	Focus is on current concerns in the business world at the expense of fundamental issues and problems.
Novel, not radical	Often repackaged ideas sold as radical and new.
Legitimised by gurus and disciples	Gain prestige through their proponents rather than empirical evidence.

Source: Adapted From Miller and Hartwick (2002)

The nature of fads and fashions lends itself to rapid diffusion and popularity peaks. But not all new initiatives are taken up or popularised; some "new" ideas become dispersed and others do not. Rogers (1993) suggests this may be because innovations are subject to "Bandwagon Effects" where the more people who take up the idea, the more pressure there is to do so. Simplicity and ambiguity are linked and fashion-setters can highlight uncertainty while at the same time offering simple solutions (Scarbrough and Swan, 2001). In a study in 2002, Ernst and Kieser, using a series of semi-structured interviews with managers and consultants, found that consultants tend to both increase and decrease managers' anxiety (perceived control) by pointing out new types of organisational problems and providing new solutions that are often management fashions. Conversely, they also help re-establish managerial control by providing managers with relevant information and tools, and by enabling them to reinterpret their organisation's current situation.

Application of the Fashion Metaphor to TQM, BPR, LO and KM

The origins and defining characteristics of each management technique are examined using the framework for characteristics of fads and fashions outlined by Miller and Hartwick (2002) in Table 3.1.

Origins of TQM, BPR, LO and KM

The origins of all four management initiatives have their roots in other theories and can therefore be considered to be novel not radical (Miller and Hartwick, 2002). Beginning with TQM, it is not easy to establish the exact date the term Total Quality Management was first used (Martinez-Lorente, Dewhurst and Dale 1998). TQM grew out of the Quality movement in the 1950s in Japan and more recently out of the 1980s fashion of Quality Circles (Juran, 1986). The term TQM is most probably a substitute for TQC – Total Quality Control (Feigenbaum, 1961) and an examination of the definitions of TQM and TQC found that there are no apparent differences in meaning (Martinez-Lorente et al., 1998).

The origin of BPR is in value engineering, which was developed by General Electric in the 1940s as a technique to improve products through redesign: anything that did not contribute to the utility of the product was eliminated. This redesign idea was applied to processes and so to the birth of BPR, which can be traced to two papers published in 1990 (Davenport and Short, 1990; Hammer, 1990). BPR emerged partially in response to the lack of emphasis on information technology (IT) in TQM.

The LO was expounded by Senge in his book *The Fifth Discipline* (1990) and has its roots in the organisation development movement of the 1960s advocated by authors such as Argyris and Schon (1978) and Blake and Mouton (1964).

KM, according to Beckmann (1999), was first coined by Dr Karl Wiig in 1986 who wrote one of the first books on the subject called *Knowledge Management Foundations* published in 1995. KM, like BPR, came to prominence because it was seen to fill the IT gap left by the LO. The profile of the KM literature is similar to that of BPR, with 51.2 per cent of articles referring to the role of IT in BPR (Tinaikar, Hartman and Nath, 1995). "KM is not a development of, but rather a divergence from, the literature on the LO – a new fashion in its own right with a new focus on tools and systems, rather than on people and processes" (Scarbrough and Swan, 2001: 7).

Each innovation is novel, not radical, with its roots in other movements, but what all four have in common is that they address a gap in the existing management literature and are "in tune with the Zeitgeist" capturing the contemporary management rhetoric (Miller and Hartwick, 2002). BPR acknowledges the IT gap and concentrates on processes. LO highlights the importance of the organisation's culture and KM advocates the capture of knowledge within the organisation, reflecting the rhetoric of the "information era". The switch in abbreviation from TQC to TQM without any apparent change in meaning is indicative of the contemporary Zeitgeist.

All four management ideas have concomitant gurus. TQM was based on Deming's W. Edwards "14 points" (1986), Joseph Juran's "Quality Trilogy" (1986) and Philip Crosby's "Quality Maturity Grid" (1979). However, it is interesting to note that none of these actually use the term TQM. BPR is associated mainly with Hammer and Champy (1993), the LO with Peter Senge, and KM with Nonaka and Takeuchi (1995) and Davenport and Prusak (1998).

Defining TQM, BPR, LO and KM

Continuing with the characteristics of fads outlined in Table 3.1, "simple", "ambiguous", "prescriptive", "one-size-fits-all" and "falsely encouraging" may be used to characterise the multitude of definitions for each management concept and their concomitant techniques. All four techniques have confusion in application of the technique and many competing definitions. All are premised on the notion that it is imperative for competitive advantage to engage in the management practice that is being promoted. It is often difficult to find one single definition; as different consultants or business schools take up the fad, they add their definitions to the already growing plethora.

One of the simplest definitions for TQM is "an organisation wide effort to improve quality through changes in structure, practices, systems and above all attitudes" (Dale and Cooper, 1992). The aim of TQM is to reduce variation in products and processes, which leads to improved quality and productivity (Banks, 2000). The customer is extremely important in TQM and this initiative has a set of statistical techniques associated with it to monitor the performance. There is, however, no singular set of practices that defines TQM with different fashion setters opting for different practices. Other paradigms, such as six sigma, kaizen and reengineering compete with TQM for prominence. These paradigms are sometimes seen as part of TQM or else separate paradigms adding to the confusion. TQM set about improving existing processes incrementally whereas BPR radically transforms them creating brand new ones, but again there is no universal or proven BPR method. According to Valentine and Knights (1997), there are two types of BPR literature: radical BPR and reflective, revisionist BPR, the latter emerging as a response to difficulties in implementing radical BPR initiatives. Radical BPR has a top-down implementation, with leaders driving change and technology enabling that change. Employees do not participate in decision-making. BPR may be defined as "initiatives large and small, radical and conservative, whose common theme is the achievement of significant improvements in organisational performance by augmenting the efficiency and effectiveness of key business processes" (Wastell, White and Kawalek, 1994: 23).

BPR was revised and as a result is more pragmatic, but now resembles the language of TQM.

One may tentatively conclude that "in practice, BPR is emerging as a new umbrella concept under which a number of quality initiatives fall" (Valentine and Knights, 1998: 84). Again, this adds to the confusion and ambiguity characteristic of fads.

Senge defined a LO as "an organisation that is continually expanding its capacity to create its future" (1990: 14). This contrasts with bureaucratic organisations, which potentially obstruct learning and prevent free flow of information. Senge described five disciplines necessary for becoming a LO: personal mastery, mental models, shared vision, team learning and systems thinking (1990: 185). The LO is often confused with the concept of Organisational Learning which, according to Schwen, Kalman, Hara and

Kisling (1998), was coined by Herbert Simon in 1953 and is "the adaptive change process that is influenced by past experience, focused on developing or modifying routines, and supported by organisational memory" (Nonaka and Takeuchi, 1995: 45). Organisational Learning is part of the LO but is independent and can take place in bureaucratic organisations. Again there is confusion of definition, allowing for misinterpretations. Current theories of the LO have several gaps that need filling, particularly concerning the implementation of learning processes, structures and the underlying psychodynamic nature of organisations (Starkey, 1998).

KM is an ill-defined area in the management literature. Like the previous three management theories, it is ambiguous, general, falsely encouraging and prescriptive. "The term is so vague that it is easy to dismiss. Worse, it has been jumped on by consultants, who know a good fad when they see one" (Jackson, 1998). Other theorists see KM as a genuine core competitive advantage (for example McKern, 1996; Ruggles, 1998; Skyrme and Amidon, 1997). There are many themes in the KM literature including the nature of knowledge, information management, information technology, people management (knowledge roles, knowledge workers), knowledge creation, knowledge sharing, transfer of learning, intellectual capital, tacit knowledge and so on. Scarbrough, Swan and Preston conducted a review of the knowledge management literature and produced the following broad definition: "Knowledge management: Any process or practice of creating, acquiring, capturing, sharing and using knowledge wherever it resides, to enhance learning and performance in organisations" (1999: 1). It appears that KM has taken over from and incorporated the LO, leading to confusion and a blurring of boundaries between the two management innovations.

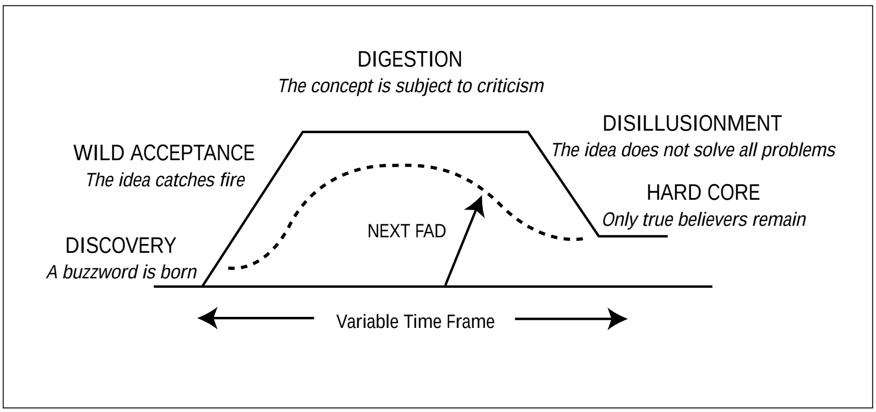
All four theories were initially thought as having organisation-wide implications, but in practice they become easy to cut-and-paste (Miller and Hartwick, 2002). This cut-and-paste practice is seen as the reason and excuse made for the failure to deliver on promise, since managers may only implement certain aspects of the management technique grafted onto existing procedures (Banks, 2000). In terms of fads and fashions, TQM has given way to BPR and LO has been subsumed by KM. All possess the characteristics of fads and fashions as outlined by Kieser (1997) and Miller and Hartwick (2002). To examine further the fad-like qualities of all four techniques, it is necessary to look at the life cycle of each to ascertain if they conform to the typical diffusion characteristics of management fads (Abrahamson, 1996; Ponzi and Koenig, 2002).

Life Cycles of Fads and Fashions

TQM, BPR, LO and KM possess fashion-like characteristics and should therefore follow a bell-shaped curve life cycle, which was first demonstrated by Abrahamson (1996) in his work on the life cycle of Quality Circles in the 1980s. Using a bibliometric technique (counting published articles), he tracked the development of the Quality Circle life cycle on the ABI Inform database and found that it had a bell shaped pattern. Ettorre (1997) proposed that a fad goes through a life cycle of 5 stages (Figure 3.1). Stage 1 is "Discovery" when articles first begin to appear. Stage 2 is "Wild Acceptance" when concept becomes very popular. Stage 3 is the "Digestion" phase where criticisms are levelled against the concept. Stage 4 is "Disillusionment" where the idea is found not to be a panacea and fails to deliver on promise. Finally, Stage 5 is "Hard Core" when only true supporters remain loyal to the technique.

In examining the life cycle, it can be seen that during the disillusionment phase the next fad has begun to emerge, showing how fads replace one another. It is useful to note that "while there may be an upward and downward trend to most fashions, the slope (rate of increase and decrease in number of articles) for each fashion is different. This is likely to depend on the existence of other fashions and events" (Spell, 1998, as cited in Gibson and Tesone, 2001: 124).

Figure 3.1: Life Cycle of a Management Fad



Source: Adapted from Ettorre (1997: 35)

It is proposed in this paper that TQM, BPR, LO and KM follow the same predictable bell shaped life cycle as outlined by Abrahamson (1996) and Ettorre (1997). Furthermore, it is expected that each new management innovation will be replaced at the disillusionment stage, as a new fad emerges. The following section presents a comparison of the life cycles of TQM, BPR, LO and KM and traces the emergence and decline of each discourse.

A Comparison of the Life cycles of TQM, BPR, LO and KM using a Bibliometric Analysis

Rationale

A bibliometric technique was employed to investigate and compare the life cycles of TQM, BPR, LO and KM. Previous analyses have found bell shape distributions for these concepts, but all four have not previously been directly compared. The bibliometric technique provides a reliable analytical approach to trace the development of a concept. Previous researchers have used this technique: Ponzi and Koenig (2002), using ABI Inform and Science Citation Index, tracked TQM and BPR from 1990 until 2000, demonstrating the bell-shaped distribution of these management initiatives, with TQM peaking in 1993 and BPR peaking in 1995. Scarbrough and Swan (2001) and Scarbrough et al. (1999) also used a bibliometric technique and tracked the literature for the LO and KM using the comprehensive on-line journal databases ProQuest Direct (PQD) and BIDS. They covered the period 1990 to 1998 and found a decline in references to the LO since 1995 which was reflected in the sharp increase in references to KM. These movements follow the bell-shaped pattern. Wilson (2002) conducted a similar study, tracing KM only, and found an exponential rise in KM literature following 1997.

Method and Results

Article counts were conducted on 10 August 2003, from Web of Science and EBSCO Business Source Premier. These databases were selected because of their comprehensive coverage of the academic literature. Counts were conducted annually to cover the period from January 1990 until the end of July 2003 for each of the four management phrases located in title, abstract or descriptor fields. Each database's results were taken separately to account for overlap of journals. The EBSCO Business Source Premier contains peer reviewed and industry articles; however, only the peer-reviewed articles were counted to allow for comparison with the Web of Science (WOS) database, as the WOS articles are all peer reviewed. The counts for EBSCO and WOS are tabulated in Tables 3.2 and 3.3, respectively.

Table 3.2: EBSCO Article Count for TQM, BPR, LO and KM from January 1990–July 2003

No. of Articles per Year

	´90	´91	´92	´93	´94	´95	´96	´97	´98	´99	´00	´01	´02	´03
TQM	80	95	153	314	289	293	253	300	308	263	265	229	199	170
BPR	0	1	2	15	59	40	47	55	75	31	29	21	19	27
LO	7	9	13	21	30	40	32	35	37	36	54	51	42	34
KM	3	5	6	4	11	5	27	38	97	166	220	301	367	227

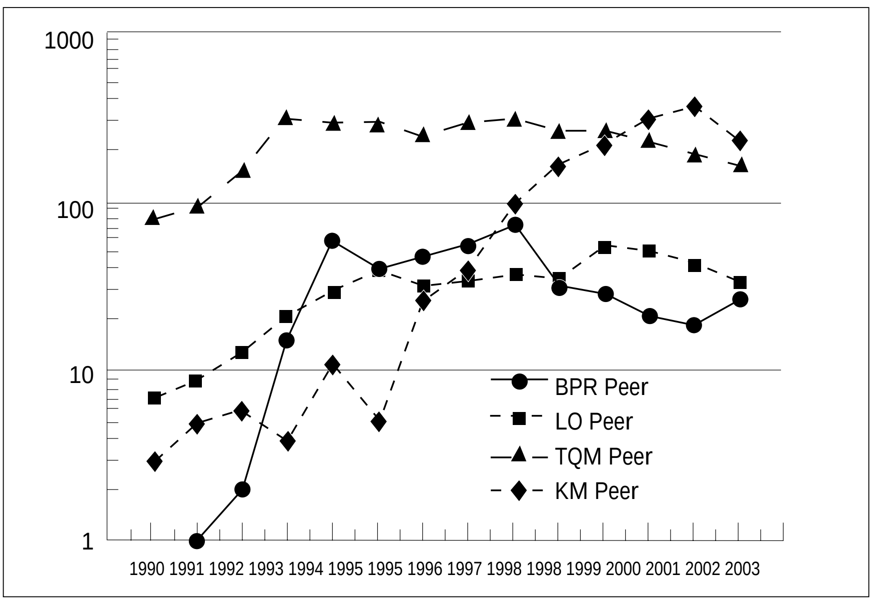
Table 3.3: WOS Article Count for TQM, BPR, LO and KM from January 1990–July 2003

No. of Articles per Year

	´90	´91	´92	´93	´94	´95	´96	´97	´98	´99	´00	´01	´02	´03
TQM	14	40	128	187	198	251	206	179	187	157	149	143	115	104
BPR	0	0	0	2	30	43	49	57	70	48	45	30	29	26
LO	3	6	5	9	17	24	21	22	36	25	35	40	31	16
KM	3	8	2	8	9	16	12	37	69	121	151	249	274	254

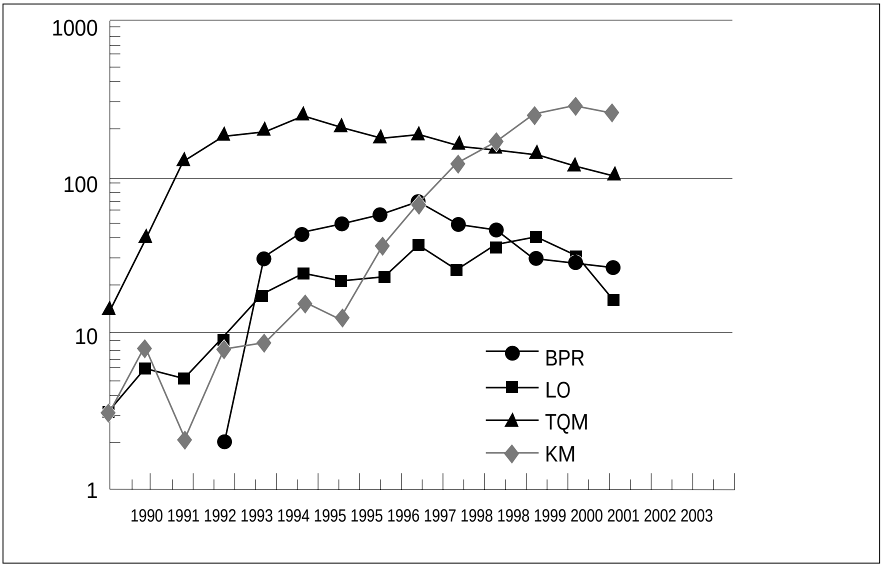
The article counts for EBSCO and WOS are graphically represented in Figures 3.2 and 3.3, respectively. These lifecycle comparison graphs of TQM, BPR, LO and KM resemble the bell-shaped pattern consistent with the previous literature (Abrahamson, 1996; Ponzi and Koenig, 2002; Wilson, 2002). The bell shapes appear smaller (although they are not), since counts are plotted logarithmically to represent all data against a single scale. The resulting plots provide a proportional representation of the different rates of increase and decrease in publications for the four discourses. Figure 3.2 shows the comparison between all four management techniques on the EBSCO Business Source Premier for peer reviewed articles.

Figure 3.2: Comparison of Peer Reviewed Article Counts on the EBSCO Database for TQM, BPR, LO and KM from January 1990–July 2003



The data depicted in Figure 3.3 is consistent with previous findings in the area. TQM reached a peak of wild acceptance in 1993 with a count of 314 articles. This was followed by a long digestion stage with article counts rising again to 308 in 1998. Then followed the disillusionment stage. As TQM reached its peak, BPR entered the discovery stage and reached wild acceptance in 1998 with 75 articles. In 2002 BPR was in the disillusionment stage of the life cycle. The LO came to prominence in 1993, had a small peak in 1995 and reached the height of wild acceptance in 2000 with 54 articles. By 2002 the LO was in the digestion stage. KM entered the discovery stage in 1996 and began to rise exponentially from 1997 reaching 367 articles in 2002. The figures for 2003 are consistent with the trend but it would be misleading to discuss actual figures, since it was not a complete annual count.

Figure 3.3: Comparison of Article Counts on Web of Science Database for TQM, BPR, LO and KM from January 1990–July 2003



The results of the article counts on the Web of Science database are similar to the EBSCO results. TQM was at the height of the wild acceptance stage in 1995 with 251 articles, while BPR entered its discovery stage and peaked in 1998 with 70 articles, the LO peaked in 2001 with 40 articles. Similar to the article trends on the EBSCO database KM reached a total of 274 articles in 2002.

Discussion

These results indicate that the life cycles of TQM, BPR, LO and KM follow the bell-shaped pattern of fads and fashions (Abrahamson, 1996). The rise and fall of the management techniques are, for the most part, consistent with previous findings by Scarbrough and Swan (2001), Ponzi and Koenig (2002) and Wilson (2002). However, Scarbrough and Swan (2001) found that the LO declined after 1995, whereas in the present study the LO showed a rise in 1995 (the LO also showed a second small peak on WOS in 1998) and then rose to new heights in 2000 (EBSCO) and 2001 (WOS). A possible reason for this relates to the theoretical origins of the concepts. The LO and KM both emerged from the organisation development movement which may have led to confusion and overlap in definitions, with KM coming under the same heading as the LO (Scarbrough et al., 1999; Wilson, 2002). Another similar pattern can be seen in the rise and decline of TQM and BPR, which both originate in the quality movement. TQM declined after 1993 but rose again in 1998, the same year BPR reached its peak. Again this is probably due to the confusion and overlap in the definitions of the two concepts (Valentine and Knights, 1998). A second reason for these findings reflects an inherent problem with using the bibliometric technique; just because a management technique appears frequently in the literature it does not follow that it is because it is being advocated.

The five stages of the life cycle proposed by Ettorre (1997) seem apt in describing how each individual fad emerges and follows a bell-shaped pattern. The results of the present bibliometric analysis show that each new fad replaces the last but not as Ettorre's life cycle indicates. New fads do not emerge at the disillusionment stage, but begin to appear earlier. BPR entered the discovery stage at the height of the wild acceptance stage for TQM, and KM began to emerge in 1997, which followed the initial wild acceptance peak in the LO literature.

Perhaps the most notable aspect of this study is that the peak count in KM exceeds the peak count of any of the other management initiatives on both databases. The article counts in this study are smaller than in previous studies (for example Ponzi and Koenig, 2002), because only peer reviewed articles were counted and these have a slower rate of publication than industry articles.

The results illustrate that fads and fashions follow a predictable life cycle: as one fad enters the wild acceptance stage a new one emerges. All of the four management techniques are still in existence, upheld by a hard core, with TQM still having a substantial body of support. If the trends found in this study continue, then the LO is about to enter disillusionment stage with KM reaching the peak of wild acceptance and moving into the digestion stage of Ettorre's life cycle. However, there appears to be confusion and overlap of definition between the LO and KM which have emerged from the organisation development literature and between TQM and BPR which have emerged from the quality movement.

Has KM Replaced TQM, BPR and LO?

The three management initiatives TQM, BPR and the LO all declined in popularity, most likely for the very same reasons they became popular (Miller and Hartwick, 2002). They were simplistic and difficult to implement due to their ambiguity, which led to initial wide interpretations but failed to deliver on promise. Implementers of TQM and BPR initiatives did not see a return on their investment (Kearney, 1992; Rigby, 1998). Part of the reason for the decline in interest in the LO since 1995 was its lack of emphasis on practice and the apparent disregard of advances in IT and management information systems (Scarbrough et al., 1999). Conversely, it was (in part) the overemphasis on IT that caused BPR to decline (Valentine and Knights, 1998).

KM is currently at the forefront of management theory, with a publication rate that is rising exponentially. A KPMG survey conducted in 1997 found that of the 200 large US firms studied, 80 per cent of corporations had knowledge initiatives (KPMG, 2000). KM appears to have incorporated the LO and overtaken TQM and BPR in prominence in the literature. Although the literature on KM is rising, many articles now are beginning to appear which are critical of the concept, leading this researcher to conclude that KM is now entering the digestion phase and will ultimately reach the stage where there are only hard core followers.

Two problematic themes are repeatedly showing up in the KM literature: the confusion over knowledge and information, and the "conversion" of tacit knowledge into explicit knowledge. According to Wilson, it is necessary to distinguish between information and knowledge: "Failure to do so results in one or other of these terms standing as a synonym for the other, thereby confusing anyone who wishes to understand what each term signifies" (2002: 2). Knowledge involves the mental processes in an individual's mind whereas information is codifiable and easily communicated. It has been argued by Smoliar (2003) that we do not manage the knowledge that is in people's heads, we manage the people themselves, and a more useful term would be "interaction management". KM may therefore be seen as object as in managing information and also as subject as in managing people and the two should not be confused.

The conversion of tacit knowledge to explicit knowledge is a major theme in the KM literature (Nonaka and Takeuchi, 1995). However, tacit knowledge is personal and is defined as "we know more that we can tell" (Polanyi, 1966: 4), and means simply that. We cannot make explicit that which is "inarticulable", what we can do is express previously unexpressed or implicit knowledge (Wilson, 2002). These problems have led to most of the confusion in the literature, and are indicators of fad-like qualities in KM.

Conclusions and Practical Implications

TQM, BPR, LO and KM follow the predictable bell-shaped life cycle of fads and fashions, when one fad reaches a peak and a new fad begins to emerge. Although these management practices may be considered fashions, this need not necessarily have negative implications.

KM has taken over the mantle as the latest fashion in management practice, though dismissing KM as simply a management fad could be a lost opportunity to understand how knowledge is developed, gained and used in organisations, and ultimately in society (Bouthillier and Shearer, 2002). If the confusion surrounding the epistemology is not cleared up, then it will surely go "out of fashion" like its predecessors only to be replaced by a new fad.

The problems of overlapping definitions and blurred boundaries between the concepts make them difficult to test empirically and easy to dismiss. Dismissing any of the management discourses, not just KM, as mere fads could be premature. The consequences of management fashions can be far reaching and permanent; they focus attention on neglected areas and identify gaps in the management literature. Without TQM there would be less emphasis on quality, without BPR we would have paid less attention to our business processes and without the LO we may not have highlighted the importance of culture and learning. Each fad provides an increment to our body of knowledge of how best to manage, and these increments can be incorporated into new theory. Instead of looking for a panacea or a best way to manage, perhaps we can learn from the best parts of each initiative.

In order that the potential benefits or best parts that management fashions and fads have to offer are not lost, business school researchers need to test new ideas and management practices empirically not just anecdotally. It would also be useful if management innovations were viewed with the long-term consequences in mind. The confusion and ambiguity surrounding management theories need to be clarified; this may lead to a slower uptake of the idea but will allow time for digestion and testing. If an organisation were considering adopting a new management technique, then perhaps it would be helpful to avoid bandwagon effects, especially the emotional drives to relieve anxiety and to be up to date. It is better to be a little unfashionable and check for empirical evidence, than to jump on the bandwagon at great cost.

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Managing the Marketing-Design-Manufacturing Interface: An Empirical Investigation of the Underlying Problems and Solutions

DR SEÁN DE BÚRCA*, DR BRIAN FYNES** AND E. ROCHE***

Introduction

All firms face the common challenge of creating distinctive capabilities and improving their economic performance. The challenge is particularly acute when you consider how the internal network of intra-organisational relationships impinges on how firms manage their relationships with organisations outside the firm. Indeed, organisations have become increasingly concerned about stimulating and facilitating communication between the various internal functional areas and the external network of customers and suppliers. This concern is motivated because of the significant impact these interfaces have on an organisation's business strategy.

The business and financial success of most organisations depends on their ability to identify the needs of customers and to create products that fulfil these needs with regard to both cost and quality quickly. Achieving these goals is not solely a marketing, design or manufacturing function; instead, it is a cross-functional, boundary spanning process that permeates the interfaces between these functions (see Figure 4.1).

The marketing function mediates the interactions between the firm and its customers. Typically, marketing personnel identify product opportunities by examining customer needs, defining market segments for targeting and

* *Department of Marketing, Smurfit Graduate School of Business, UCD, Blackrock, Co. Dublin, e-mail: sean.deburca@ucd.ie*
** *Department of Business Administration, Smurfit Graduate School of Business, UCD, Blackrock, Co. Dublin, e-mail: brian.fynes@ucd.ie*
*** *Department of Management and Organisation, Waterford Institute of Technology, Co. Waterford, e-mail: evelyn.roche@wit.ie*

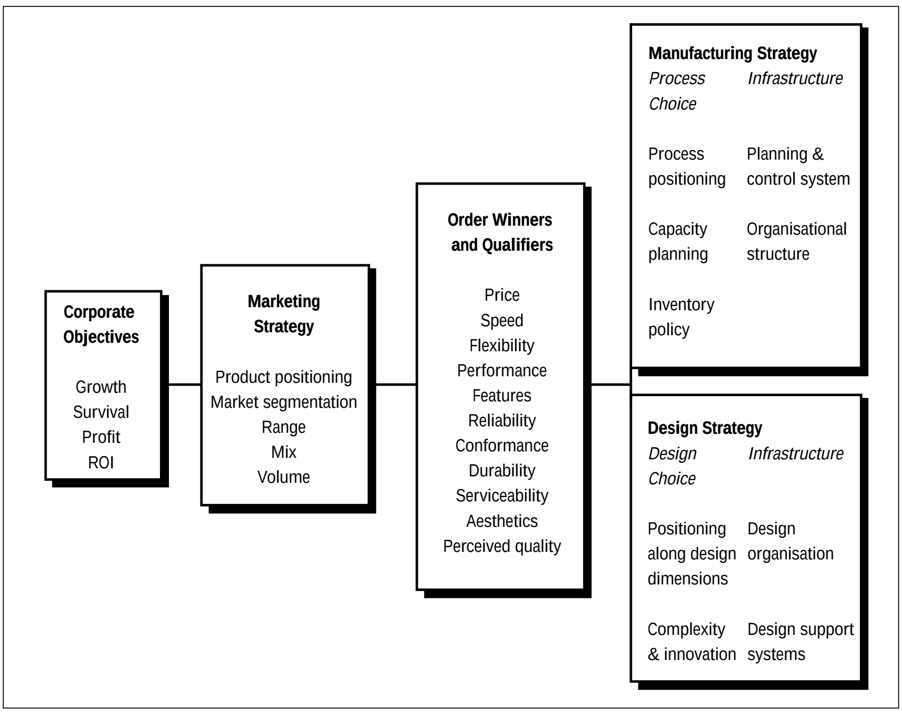
positioning. In addition, marketing is responsible for product launches, promotion and brand development, pricing and channel distribution negotiations, and after sales service.

The design and engineering function focuses on defining the physical form of the product to meet customer requirements best. It is responsible for both engineering design (the development of a product from its technical conception through detail design, and the design of the related manufacturing process and tooling) and industrial design (the aesthetics, styling and user-interface dimension).

The manufacturing function is responsible for designing and operating the production system in order to manufacture the firm's product lines. This involves management choices with regard to production technology, process management, quality, logistics and capacity planning.

The management of these relationships can have a clear impact on business strategy. Manufacturing strategy and design strategy produce the order winners and qualifiers and through its marketing strategy enables an organisation to meet its corporate objectives of growth, survival, profits or return on investment (Figure 4.1).

Figure 4.1: Business Strategy and the Marketing-Manufacturing Interface



Source: Fitzsimons et al. (1991)

THE MARKETING-DESIGN-MANUFACTURING INTERFACE

The literature on the relationship between marketing, design and engineering and manufacturing is considerable (Biemans, 1995; Davies-Cooper and Jones, 1995; Gupta, Raj and Wilemon, 1987; Hanson, Voss, Blackmon and Claxton, 1996; Hise, O'Neal, Parasuraman and McNeal, 1990; Moenaert, Souder, De Meyer, 1994; Pegels, 1991). Many of the problems in the relationship between marketing and design stem from the different backgrounds of marketers and designers which foster a lack of interest in each other's work and thinking in stereotypes (Biemans, 1995). A summary of some of these stereotypical perceptions is outlined in Table 4.1. Any analysis of how these interfaces are managed needs to address the role of design and engineering within the organisation (Davies-Cooper and Jones, 1995). This role may be either negligible or substantial. In the former case, the product design and specification will typically be provided by the customer (as in basic sub-contract manufacture), whilst in the latter case the design will typically be developed in-house (companies who design, manufacture and market their own products). Alternatively, some companies carry out both sub-contract and own-product functions. How to manage the above interfaces will be to some extent dependent on the strategic role of design and engineering within the organisation.

The differences in cultures and perceptions can impact negatively on the success of product development. Indeed empirical research suggests that collaborative efforts between marketing and R&D during the actual designing of new products appear to be a key factor in explaining the success levels of new products (Hise et al., 1990). Davies-Cooper and Jones (1995) identified the following problems at the marketing-design and engineering interface. Firstly, marketing executives did not fully understanding the design process. Secondly, there was a lack of clear information supplied to the design team from marketing executives. Thirdly, there was little evidence of mutual respect between the functions and finally, there was a lack of market research and no co-ordination with sales.

Table 4.1: Marketing and Design and Engineering – How they view each other

Marketing People about Technical People	Technical People about Marketing People
Have no sense of time	Want everything now
Don't care about costs	Are aggressive and too demanding
Have no idea of the real world	Are unrealistic
Hide in the laboratory	Make promises they cannot keep
Cannot communicate clearly	Are involved only in advertising and PR
Should be kept away from customers	Are focusing on customers who do not know what they want
Require customers to adapt to themselves	
Lack a service and customer orientation	Make bad predictions

Inadequate attention to competitive issues	Cannot make up their minds
Are always looking for standardisation	Change the design specification frequently
Are inflexible	Are too impatient
Are very conservative	Are more interested in playing golf
Have a narrow view of the world	Are always in a hurry
Always underestimate costs	Do not trust technical people
Have no sense of humour	Set unrealistic goals for profit margins
Are off in another world	Do not understand technology
Are passive	Are not interested in the scientists' or engineers' problems
Do not understand customers	Are too quick in introducing a new product
Cannot stick to schedules	Want to ship products before they are ready
Are only interested in technology	
Are slow	
Never finish developing a product	

Source: Biemans (1995)

With respect to the marketing and manufacturing interface there is a lack of clear and explicit policies that enable managers to manage the problem areas constructively. There is no set of agreed rules within which marketing and manufacturing can operate (Song, Montoya-Weiss and Schmidt, 1997). Each group develop their own functional strategies that relate to the total corporate strategy and neglect to pay particular attention to the needs of other internal functions. There are no measurements of performance against an agreed set of criteria which focus specifically on interfunctional problems.

The rift between the two groups is further escalated because both parties are evaluated and rewarded on the basis of different criteria. Shapiro diagnosed the situation as follows:

> … the marketing people are judged on the basis of profitable growth of the company in terms of sales, market share, and new markets entered. Unfortunately, the marketers are sometimes more sales-oriented than profit-oriented. On the other hand, the manufacturing people are often evaluated on running a smooth operation at minimum cost. Similarly unfortunately, they are sometimes more cost-oriented than profit-oriented. (1987: 108)

In terms of the co-operation between design and manufacturing function, Davies-Cooper and Jones (1995) in the same study identified the following problems at the design and engineering-manufacturing interface. On one hand, design and engineering did not understand the manufacturing implications of their decisions. On the other hand, manufacturing was seen as constraining design and engineering. The main focus of the manufacturing dissatisfaction centred on not being involved early enough in the design project. They also criticised the design function for not using the same components for prototypes as intended for production.

Other empirical studies have highlighted the benefits of close interaction between design and engineering and manufacturing (Francis and Winstanley, 1988). They highlight the critical role of frequent consultation in order to ensure that the final product design is within the boundaries of the manufacturing capabilities of the organisation. Close co-operation assists design engineers to design products for ease of manufacture, low cost and high quality. Furthermore, design engineers can provide useful inputs on manufacturing decisions on tooling and on sourcing and supply options. Design teams thus need to have a comprehensive understanding of current and planned process technologies (Francis and Winstanley, 1988). This interface is further complicated by the rapid rate of technological change and shorter product life cycles.

In many new product development projects a large portion of the manufacturing costs are committed early on in the design process. The 80/20 rule first reported by Downey (1969) in the British Aerospace industry found that approximately 80 per cent of manufacturing costs are committed during the first 20 per cent of the design process. Similarly, the use of tools and techniques such as value analysis, quality function deployment and Taguchi methods can be used extensively early on in the design process in order to design quality into the product. Best practice in design management can thus have a direct impact on order-winning criteria such as price, quality and time-to-market.

It is clear these interfaces need to be co-ordinated and managed effectively. Indeed, organisations have become increasingly concerned about stimulating and facilitating communication between the various functional areas. This trend is particularly evident in the area of new product development because of its cross-functional nature. Simultaneous engineering, quality function deployment and cross-functional project teams are among the most widely used practices in this area. Developing new products can have a significant impact on the relationships between these functional areas as decisions taken in one area can cause adverse reactions elsewhere. This paper focuses on how this challenge might be tackled by articulating the problem areas that need to be addressed in co-ordinating and managing these interfaces. Principles of best practices from a range of companies credited with achieving best practices in the area are outlined as potential means to deal with these problem areas.

Methodology

The purpose of this research was to examine the problem areas that need to be addressed in co-ordinating and managing the internal interfaces within companies and to identify principles of best practice to deal with these problem areas. The sample frame chosen consisted of ten companies who had won the Supplier of the Year Award. These companies were chosen because they had been officially recognised for their excellence in meeting their customers' requirements. It was envisaged that their achievements in managing their external relationships would enable them to respond to the internal interface management issues. As a result, their modes of operation, values and insights were particularly enlightening. Given the fact that a detailed probing of each company's attitudes, values and activities was required for this research, in-depth interviews were deemed the most appropriate research instrument to employ. Furthermore, to facilitate accurate analysis of the data collected, without losing any of the complexity or content of these interviews, the NUD.IST software package for qualitative analysis was utilised.

The following section provides a brief description of the companies who agreed to take part in the research. In order to maintain the confidentiality, which these firms requested, the names of individuals and companies are not mentioned.

Company A

Company A is a well-established metal pressing company, with a reputation for efficient problem solving and quality control. Set up in 1980, it is one of Ireland's most modern press shops with its own design and tool-room facility. It has a dynamic, young and highly skilled workforce of 120 employees, who have a variety of modern production facilities at their disposal. This company is uniquely capable of manufacturing components from the tool design stage right through to the finished product. A full range of sub-assembly and finishing services are also provided, including powder coating and pad printing. Quality approvals and systems include Ship-to-Stock, Just-in-Time (JIT) status, ISO 9000, Statistical Process Control (SPC) and Materials Requirement Planning (MRP). The company also has a continuous investment programme to take full advantage of the latest developments in technology.

Company B

Established in 1964, this company is one of the largest and most modern printing plants in Ireland, employing a team of 115 young professionals. Its comprehensive state of the art equipment and facilities include design, typesetting, finished art studio, plate making, printing and fully automated finishing. In effect, the company is capable of providing the complete print solution, from initial concept to final delivery. In 1987 they became the first print company in Ireland to be awarded the Quality Mark of the Irish Association. The following year, they won the Supplier of the Year Award, while in 1990 they achieved ISO 9000 certification. Several of their vendors have also granted them Ship-to-Stock vendor approval. This company has achieved market leadership largely by developing a unique sensitivity to the requirements of healthcare customers in highly specialised areas such as labelling, inserts, instruction leaflets and booklets.

Company C

Set up by four brothers in 1974, this company quickly built up a reputation as a high quality, reliable supplier. Concentrating on the Irish market initially, they gradually expanded their customer base to include countries right across Europe, from England to Sweden, Norway, Finland and Germany (where they have been particularly successful). Operating from two modern factories in the Carlow region, they employ a workforce of 150 highly skilled personnel and have an impressive turnover in excess of €8 million per annum. Over 80 per cent of their outputs are exported, while major customers include Volvo, Michigan Euclid, Clark Equipment, Linde, Moffett Industries, Tenco and Ellickson Engineering. This company specialises in manufacturing hydraulic cylinders, ranging from 25mm to 200mm in diameter and up to 7m in length. Most of their products are custom made to very exact standards. Having operated systems such as JIT and Ship-to-Stock long before they became recognised supplier requirements, the company achieved the ISO 9002 award in 1993 and is currently in the process of setting up a World Class Manufacturing (WCM) system.

Company D

Based in the Galway region, this company first began operations in 1977 and currently employs 90 highly motivated and skilled workers. Its activities include sheet metal cutting and forming, tooling, machining, fabrication of mainframes for the computer industry, automated sub-assembly for the automotive industry, machined components for industrial and home appliances, and enclosures to IPS65. The company has the facilities to engage in prototype development, jig and fixture designing, tool pressing, spray-painting, stamping and silk screening, and powder coating polishing. The company's main customers operate in a diverse range of industries, including the computer, automotive, textile, medical, electronic and domestic appliance industries. It is located both in the United States and throughout Europe. Quality standards achieved by this supplier include ISO 300, ISO 9002 and Ship-to-Stock.

Company E

Company E is a relatively young company, having only commenced trading in Cork in 1982. It operates in a niche market, manufacturing PTFE-lined pipes and PTFE-lined systems for customers involved in the chemical-pharmaceutical industry. Basically, the company welds pipes together and then lines them with steel, so that they are chemically resistant for the transfer of acids. By introducing a moulding facility, it was also able to mould raw materials polymer into the fittings, giving them greater flexibility in terms of producing specials for their customers. The company's products are of an exceptionally high quality, meeting Federal Drug Administration Approval and earning it Quality Vendor Awards and the ISO 9002 award in 1994.

Company F

This company designs and manufactures PVC, uPVC and co-extruded plastic profiles for truck trailers, fridges, showers, windows, electrical trunking, seal gaskets and other products. Established in Dublin in 1984, it now employs 24 people and has annual sales of over €1.9 million. It operates JIT and Ship-to-Stock systems for many of its main customers. Two years ago, the company embarked on a €750,000 expansion programme, which is set to increase its workforce by 50 per cent in the near future. Initially, it concentrated on the Irish and British markets, but in 1995 the company began to consider more distant markets and has since won substantial orders from Germany, Scandinavia and the Middle East, worth more than €250,000.

Company G

Established in 1977, this company produces a comprehensive range of high quality printed and structured components, using a variety of materials from polycarbonate film to aluminium sheets. Its product range includes nameplates and decals, instrumentation and control panels, membrane touch switches, RFI and EMI shielding, structured plastic insulation components and precision printed and fabricated overlays. It has a workforce of 112 highly skilled and motivated employees, serving an impressive list of multinationals, including Thermo King, Apple, Oki (Scotland), Mitsubishi, Compaq, Motorola and Dell. In 1986, this firm became one of the first Irish indigenous manufacturing firms to achieve ISO 9000 accreditation. It now holds ISO 9002 status, Ship-to-Stock vendor status with many key customers and the "Q" mark of the Irish Quality Association. In addition, 80 per cent of its products have Underwriter Laboratories and Canadian Standards Authority recognition.

Company H

Since it was first set up in 1981, this company has maintained a continuous record of growth and achievement. With an enthusiastic and skilled workforce of 45 people, it specialises in the production of high quality precision-turned components up to 60mm in diameter, in materials ranging from mild steels to nylon. The company is capable of carrying out a wide range of activities with these components, including drilling, form cutting, milling and both internal and external threading. It can also engage in heat treatment, surface grinding and other finishes. Principal customers include Thermo King, Apple, Ericsson, ABB Rolex, Krups and Hewlett Packard amongst others. In terms of quality approvals and systems, it has achieved ISO 9002 and the Irish "Q" Mark, while it is currently operating Total Quality Management, Kanban, Zero Defects and Statistical Process Control (SPC) systems.

Company I

Based in Galway, this company was established in 1980 and has since expanded to include a total of 68 employees. Concentrating its efforts on meeting the needs of multinational Original Equipment Manufacturers (OEMs), it produces specialist fasteners and components for use in the mechanical and electronic equipment manufacturing sectors. With a turnover of between €3 million and €5 million per annum, some of its major customers include IBM, Philips UK, Danfoss A/S and Thermo King Europe. In addition to the Supplier of the Year Award, the company has also received the IQA award and ISO 9002 status. With key customers, it operates SPC, JIT and Ship-to-Stock systems – in some cases, the company has even attained Ship-to-Line status.

Company J

One of Ireland's longest established engineering sub-contracting companies, Company J was set up in 1973 with a working capital of a mere €400. It now has a skilled workforce operating at two modern hi-tech factories in Waterford, producing annual sales of up to €3.5 million. This company provides high quality machined components, assemblies and moulds for customers in a wide range of sectors, including process control equipment, automobile components, food processing, computers and medical equipment. Recently, the company has decided to concentrate on the medicare sector in particular. Principal customers include Allied Signal, Amdal, Bausch and Lomb, Milton Bradley and Summit Technology. Already accredited with ISO 9002, Ship-to-Stock, Ship-to-Line and (in one instance) World Class Supplier Status, the company aims to implement a World Class Manufacturing (WCM) system by the end of 1997.

Findings

The purpose of this research was to examine the problem areas that need to be addressed in co-ordinating and managing the interfaces. The sample frame chosen consisted of companies who had won the Supplier of the Year Award since its introduction in 1984. We felt this sampling frame was an extremely appropriate choice, as these companies had been officially recognised for their excellence in meeting their customers' requirements. As a result, their modes of operation, values and insights were particularly enlightening.

On the whole, the findings strongly supported the literature. The companies examined confirmed the differences in perfection across a number of areas. Our research points to key information flows between internal functions that lead to problem areas that need to be addressed in co-ordinating and managing these business process interfaces.

The main problem areas related to marketing and design and engineering interface concern the identification of order-winning criteria, sales order processing, specifying customer requirements, handling customer enquiries, communicating customer-led modifications to designs, negotiations on pricing and delivery dates. There was strong evidence of what Biemans (1995) defines as "thinking in stereotypes". Respondents believe that a possible explanation lies in how each group's performance is measured. These metrics are not mutually agreed and often run counter to one another. In addition, respondents felt they are reinforced by the education and training background of each group where there is little effort to foster an understanding in each other's work and bridge the differences in cultures.

With respect to the marketing-manufacturing interface, our research highlights the following interface issues that caused problems: forecasting, production scheduling, delivery capability, quality assurance, cost control, new product development and after-sales service. Similar sentiments as above were expressed between these groups. Both believe that their strategies reflect the total corporate strategy but they fail to accept in following such strategies that they neglect to pay particular attention to the needs of other internal function. Again there is the problem of no common ground on performance metrics.

From the design and engineering-manufacturing perspective the key issues causing concern are: engineering change notices, production routings, tooling requirements, CNC programs, purchase orders and inventory availability. Lack of consultation and not being involved early enough in the design project is the main focus of criticism from manufacturing. While the technical nature of their work provides some common ground, design and engineering felt constrained by the manufacturing people who were mainly concerned with running smooth manufacturing operation at minimum cost.

Finally, it is evident from the research the extent of the problem areas that needed to be addressed in co-ordinating and managing the interface within companies. While the companies acknowledged the extent of the challenge, they also indicated the principles of best practice they adopted to address these problems.

Management Implications and Conclusions

The purpose of this research was to examine the problem areas that need to be addressed in co-ordinating and managing the interfaces within companies and to identify principles of best practices to deal with these problem areas. This section addresses the principles of best practices adopted by the companies as potential means to deal with these interface problem areas. If companies are to manage this interface more effectively and improve interfunctional communication, the following integration mechanisms identified by our research study and other research (Moenaert et al. 1994) provide considerable scope for relationship enhancement in achieving best practice.

Firstly, top management should foster and nurture a positive degree of interest, trust, awareness and support between functional teams. This should assist in addressing the different orientation and experience of the people involved. Managers perceived themselves as culturally different and only seem to be at ease in their own functional areas. Essentially the kind of strategic thinking and leadership that needs to happen is for marketing to focus on external customers with a clear understanding of manufacturing capability.

Secondly, cross-functional groups organised as venture teams, new product project teams, temporary task forces under the direction of a strong project manager are among the most frequently used methods of introducing the above mechanisms (Gupta et al., 1987). Furthermore, the composition of such cross-functional groups should be structured to address other boundary spanning activities.

Thirdly, rules and procedures should be formalised within project teams. This should increase the amount of communication flows between functional areas and ensure the early involvement of both functions in the product development process. These rules and procedures should also provide mechanisms for conflict resolution and can serve as a platform for further informal communication. Clear and explicit policies enable managers to manage problem areas constructively. While each group can develop their own functional strategies that relate to the total corporate strategy, they must do so by paying particular attention to the needs of other internal functions.

Fourthly, decentralisation of decision-making and power down through the organisation should be implemented. Typically this will have a positive impact on interfunctional communication. Moreover, role flexibility or out-of-role behaviour (e.g. marketing personnel running lab tests) should be encouraged in order to enhance interfunctional communication. In addition, informal interfunctional contacts should be organised to generate mutual respect by sharing experiences and concerns.

Fifthly, performance metrics should mutually be agreed and established. Measuring performance against an agreed set of criteria, which focuses specifically on interfunctional problems, is essential for the effective management of these relationships.

Finally, some organisations have created mixed career paths to deepen and foster understanding between functional areas. Managers cross over functional lines during their development thus ensuring they will better understand the activities, concerns and values of their colleagues in other functional areas.

In conclusion, it is important to acknowledge that there are financial implications resulting from these measures. The interface between finance and the other functional areas has received less coverage in the literature. This is probably because of the less frequent level of interaction at this interface. Nonetheless, the central role that financial analysis plays in any organisation has a major impact on performance. Issues such as project management, costing and pricing, profit margin analysis and return on investment, net present value analysis, funding requests and performance metrics should be addressed.

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Quantification of Output Growth and Value-Added Captured by the Irish Food Processing Sector

JOHN O'CONNELL, LAURENCE HARTE AND DERMOT RUANE*[1]

Introduction

Value-added is defined as the value of output less the value of intermediate inputs consumed (Hill, 1971). It may be measured for any entity in which economic activity is conducted. It may be expressed in gross or net terms. In accounting terms, gross value added consists of the sum of the values of wages/salaries, profits and depreciation. Gross value added (GVA) represents the payment to all the factors of production in the defined business entity. A measure of net value-added excludes the value of depreciation.

Value-added is the basis for measurement of Gross National Product (GNP) and Gross Domestic Product (GDP) and equates with the word "product" in these terms. Economic growth in a country or region is conventionally measured by reference to change in either GNP or GDP at constant prices.

> Few statistics have such a key role to play in the formulation and assessment of economic policy as the rate of economic growth. In the long term, the gradual improvement in the standard of living of the community, which could be regarded as the prime objective of economic activity, is largely determined by the rate of growth. Indeed, the rate of growth achieved by a country has come to be regarded as a direct measure of the degree of success or failure of its economic policies … (Hill, 1971).

This paper is concerned with the measurement of value-added in the Irish food processing sector. Food processing in Ireland is a significant economic activity in the national context. The GVA arising from food processing in 1998 was IR£1.7 billion (Irish Statistical Bulletin, June 2000). GNP in that year was IR£53.2 billion (National Income and Expenditure 1999). Food processing, strictly defined, therefore contributed 3 per cent of GNP. In that year, 41,441 people were employed in food processing (Irish Statistical Bulletin, ibid.). Total employment in that year was 1,495,000 (Agri Food 2010, Main Report, 2000). Food processing therefore contributed 2.8 per cent of Irish employment in 1998.

* *Department of Agribusiness, University College Dublin*

Apart from its direct contribution to GNP and employment, food processing is inextricably linked to incomes and employment in Irish farming which in 1998 also contributed approximately 3 per cent of GNP but accounted for 8.6 per cent of employment (Agri Food 2010, 2000).

The main focus of this paper is measurement of change in net output of food processing at current prices. Net output is a more comprehensive measure of "value-added" than the published value-added measure and for reasons discussed below is used in preference to that more restrictive measure. Quantification of either definition of "value-added" at constant prices rather than current is more difficult and entails consideration of many conceptual and technical issues relating to the suitability of index numbers. It is a complex and specialised area of work as can readily be appreciated from some of the published work (Diewert, 1995). It is felt that dealing with these methodological issues should form the subject of a paper in their own right.

Data and Concepts

The data used in this paper are, for the most part, data compiled by the Central Statistics Office (CSO) and predominantly those of the Census of Industrial Production as published in the Irish Statistical Bulletin. Some CSO data from Supply Balances are also used as are data published by the Department of Agriculture, Food and Rural Development (DAFRD). All are secondary data.

For Census of Production purposes GVA is equal to production value minus the value of intermediate consumption (Irish Statistical Bulletin, ibid.). Production value is the total turnover of the enterprise irrespective of whether that value derives from production activities related to the main processes of the business. Intermediate consumption value comprises the value of all purchases by the business. Subsidies are excluded and indirect taxes (with the exception of VAT) are included. GVA as published in the Census of Industrial Production reports is therefore measured at current market prices rather than at factor cost. It is a measure of what the business or industry keeps of its market earnings to pay for its factor resources.

Another concept for which census data are presented is that of net output. Net output is equal to the value of gross output minus the value of industrial input. Gross output includes the value of goods and services sold by the business, but other items, for example, royalties are excluded. It is a factor cost measure in that the value of subsidies is included and indirect taxes excluded. For most industries the value of gross output is somewhat smaller than the production value as used in GVA calculation.

Industrial input comprises the value of raw materials, fuels and industrial services. Input costs such as royalties, freight, telecommunications etc. are included only in intermediate consumption. Industrial input is a significantly smaller measure of input than intermediate consumption as used in GVA calculation. In value, it averaged 78 per cent of intermediate consumption over the data period. In practice therefore, net output always exceeds gross value added.

While GVA is measured at market prices, net output (NO) is measured at factor cost. Because of this and because of the definitional aspect described above, NO is therefore a more complete measure of the value-added or "servicing" of raw material by processors than GVA even though the inputs involved in that "servicing" may come from other sectors, for example freight and telecommunications.

For these and other reasons discussed below under "Methodology", the NO measure was used here in preference to the GVA.

METHODOLOGY

The first part of this analysis examines the growth rate of the food processing sector in total and that of individual industries within it. It makes comparisons between food processing and the national economy. Growth rates of volume of production are estimated from linear equations of best fit.

The second part of the analysis focuses on the estimation of change in the value of net output per physical unit of input for two major food processing industries, namely, dairy product manufacturing and meat processing. NO is used here in preference to GVA both because it is a more comprehensive measure of the "servicing" by processors of raw material input than is GVA and also because the perspective of the author was to try to get some idea of the degree to which major agricultural inputs into processing are being "added to" over time by way of processing services. NO is the difference between a measure of revenue (R) and a measure of costs (C) and may be denoted as follows:

$$NO = R - C$$

Change in NO may come about because of change in R, C or both.

Change in NO is specified as follows:

$$\Delta NO = f(\Delta SI, \Delta BPM, \Delta NP, \Delta PP, \Delta PS, \Delta IC)$$

where:

ΔNO	=	change in absolute net output at current prices
ΔSI	=	change in scale or volume of major agricultural raw material going for processing
ΔBPM	=	change within product mix as it existed in base period
ΔNP	=	change in product mix arising from introduction of new products not existing in base period
ΔPP	=	change in product selling price
ΔPS	=	change in unit cost of processing services
ΔIC	=	change in unit cost of material inputs

All changes arising from individual factors may be interpreted on a *ceteris paribus* or "other factors remaining constant" basis. Thus, on that basis, NO would be expected to double (ΔNO) if the scale or volume of the major agricultural input into processing doubled (ΔSI). Similarly, given that a mix of products of differing levels of processing/marketing services exist in the base period, change *within the confines of that product mix* (ΔBPM) will cause NO to change. The introduction of new products (ΔNP) which did not exist in the base period product mix will also cause NO to change except in the unlikely event that the new products replace existing products with the same NO levels.

A change in product selling prices (ΔPP) will cause NO to change. Such a change may be a general market price level change or it may be specific to the firm or industry concerned. Specific selling price changes may arise, *inter alia*, because of changing product quality unique to the firm or industry, changes in buyer perception arising from changes in marketing (foe example branding and distribution) strategies. Change in unit cost of processing services (ΔPS) is largely determined as the net outcome of changes in costs and productivity of labour and capital.

Finally because NO, like GVA, is defined as the difference between a measure of revenue and input costs, it follows that NO can also change because of change in materials input costs (ΔIC). The input cost of most interest here is the price of the main agricultural input and change in NO will be examined in the context of change in the prices of those agricultural products.

The methodology firstly involves taking the value of NO in the base year and applying the rate of change in the volume of the main agricultural raw material input to it. This generates a new series of NO which builds on the product mix as it existed in the base year. It is an estimate of the change that would have arisen in NO if nothing other than the scale or volume of the main agricultural raw material had changed. The difference between the published NO and this estimated NO is therefore explained in terms of the aggregate effects of changes in all other variables, namely, change in the product mix (ΔBPM, ΔNP), change in product prices (ΔPP), change in unit cost of processing services (ΔPS) and change in raw material unit input (ΔIC).

Secondly, the change in this series (i.e. difference between published and estimated NO) is divided by the volume of the main agricultural input to give an estimate of the *change* in the level, in value terms, of processing service per unit of agricultural raw material used. Conceptually, if the effects of changing unit cost of processing services could be removed, i.e. if one could deflate the series by a price index of processing services, one would have derived a measure of the change in the level, in volume terms, of processing services per unit of agricultural raw material used. This could be referred to as change in the intensity of the processing function. An increasing value for this ratio over time would mean that processors were adding increased volume of processing services to each unit of agricultural raw material processed.

Such a measure would be useful from a policy point of view. It is probably the case that when politicians and others refer to the need for greater value-added in Irish food processing they are intuitively referring to the need to increase the volume of processing services per unit of raw material input. In this paper, a step is taken in the direction of quantifying that concept.

It is probably also the case, however, that those spokespersons think of increased value-added only in terms of the application of increased capital, labour and material inputs which impact on product mix changes.

However, as pointed out above, change in the value of NO may also occur for many reasons other than product mix changes, amongst which are changes in product selling prices occasioned by, for example, better distribution channel strategy and branding effect. While difficult, it is not always beyond the bounds of research that such effects could be quantified in their own right.

For many years, CBF-The Irish Livestock and Meat Board had the objective of reducing the volume of Irish beef exports sold into wholesale markets and increasing the volume sold directly into higher paying supermarkets. A large measure of success was achieved in this regard (Irish Food Board, personal communication). An analysis of the UK beef market (O'Connell et al., 1981) estimated that processors selling beef directly to UK supermarkets received a positive price effect of 5–8 per cent over the same quality product when sold to wholesalers. Thus, the increased value-added effect (+ΔNO) arising from a better price (ΔPP) achieved through change in channel strategy was readily quantifiable. (It could be argued that the channel effect referred to here is more correctly treated as a product mix effect because, even though the physical product did not change, the conditions of sale were quite different).

CBF also had an objective of changing the product mix away from bone-in beef to boneless vac-pack product (ΔBPM). In this case also a significant degree of success was achieved (CBF Annual Review, 1990) and similarly the value-added gain arising was relatively easy to measure because both the necessary volume and price-effect data were available.

Results

Food Processing Sectoral Growth 1991–1999

Table 5.1 presents growth rates calculated from annual volume of production indices for the food processing sector as a whole and for individual industries within it. Growth rates were estimated on the basis of a fitted trend line thereby incorporating all the observations in the nine-year data period in the calculation.

Table 5.1: Average Annual Growth* in Volume of Production, Ireland, 1991–1999

NACE code	Sector	% annual change
411-423	**Food processing**	**+5.6**
412	Slaughtering and preserving of meat	+1.3
413	Manufacture of dairy products	+1.7

416,422	Grain milling and manufacture of animal and poultry feed	+2.9
419	Bread, biscuit and flour confectionery	+5.7
420-421	Manufacture of sugar and cocoa, chocolate and sugar confectionery	-0.3
411,414,415, 417-418 and 423	Other foods**	+9.5
	Manufacturing industry	**+12.1**
	All industries	**+11.4**

* Calculated on the basis of a fitted line: log index no. = f (year)
** "Other foods" comprise manufacture of vegetable and animal oils and fats; processing of fruit and vegetables; processing of fish; miscellaneous foodstuffs (i.e. NACE 417-418,423)

Volume of production of the Irish food processing sector grew at an average annual rate of 5.6 per cent over the 1991–1999 period. Growth was highest at an annual rate of 9.5 per cent in the "Other foods" category, followed by 5.7 per cent in "Bread, biscuit and flour confectionery" and a 2.9 per cent rate in "Grain milling and manufacture of animal and poultry feed".

However, growth was low at annual rates of 1.3 per cent and 1.7 per cent respectively in the industry's main commodity sectors of "Slaughtering and preserving of meat" and "Manufacture of dairy products". Volume of production declined in "Manufacture of sugar and cocoa, chocolate and sugar confectionery".

The overall growth rate of 5.6 per cent represents a very acceptable performance from what is a mature industry, although it is less than half the rate of growth achieved by Irish manufacturing generally in this period of unprecedented growth of the Irish economy.

The performance of the food sector which is largely an indigenous sector may be more fairly compared with performance of the total indigenous manufacturing sector. Following relatively poor performance in most of the 1980s O'Malley (1998) showed that the volume of production of the Irish indigenous manufacturing industry grew by what he regarded as quite a good rate of 4 per cent per year in the period 1987–95. While in the same period, all Irish industrial output grew by 9.9 per cent per annum but annual production in the OECD as a whole grew by only 2 per cent and that in the EU by only 1.7 per cent.

In addition, as illustrated by Harte (1998/99), a focus only on domestic growth of the Irish food industry ignores the very impressive international growth of Irish-owned food companies over this period.

Within food processing, "Other foods" grew most rapidly. It is likely that growth in this category was driven primarily by the high income growth of Irish consumers with increasing demand for food variety and convenience. Development of French-type bread and in-store baking and the pioneering of their development by local companies is likely to have been an important factor in growth of the bread and grain milling sectors.

Growth in the dairy, meat and sugar sectors has been constrained by EU quota limits on farm production of the raw materials for these sectors. In addition, both the dairy and beef sectors have especially high commodity export contents and limited exposure to the fast-growing domestic market.

It is unfortunate that a breakdown of the "Other foods" category is not available. It would be of considerable interest to be able to get a better focus on the types of businesses that produced such high growth rates.

Apart from problems of industry classifications, the volume of production concept is also deficient to an extent. Volume of production, while of interest, is not necessarily a reliable indicator of the more important concept of value-added or of the wealth retained by an industry and which is the focus of this analysis.

A classification system introduced in 1991 (NACE Rev.1) for the census of industrial production gives some greater breakdown of food processing. Values for turnover and gross value added and for gross and net output for this classification are available. It was argued earlier that net output was the preferred measure in this exercise. Since net output is a "broad" measure of value-added it is reasonably valid to compare it with GNP. This will give some indication of the relative size and growth of food processing although the result derived using net output will tend to overestimate the size of food processing as strictly defined. The results of this comparison are presented in Table 5.2. Both net output and GNP are expressed in factor cost terms.

Table 5.2: Comparison of Net Output of Food Processing with GNP, Both at Factor Cost*

		1991	1998	1998 as % 1991
NACE	**Sector**	**Net output as % GNP**		
151-158	**Food processing**	**8.5**	**7.8**	**91.8**
1511, 1512	Meats	1.0	0.66	66
153	Fruit and veg.	0.22	0.12	55
155	Dairy products	1.77	1.01	57
1571	Animal feeds	0.29	0.18	62
1572, 1581	Prepared pet foods	0.03	0.036	120
1582,	Bread and flour confect.	0.49	0.35	71
1583, 1584	Sugar, cocoa, chocolate and sugar confectionery	0.63	0.31	49
1585, 1586,	Macaroni, noodles, couscous etc.			
1587	Tea, coffee Condiments, seasonings	0.10	0.13	130
154,156,1588,	Vegetable and animal oils and fats			

1589	Grain mill products, starches and starch products Homogenised food preparations and dietetic food Other foods n.e.c.	3.46	4.53	131

Note: The NACE codes and related official titles of the industries named in Table 5.2 are given in Appendix 5.1

* GNP at factor cost was estimated from data in "National Income and Expenditure 1999"

The net output of Irish food processing in 1998 comprised over 90 per cent of its 1991 position in GNP. In view of the extraordinary growth rates achieved by the Irish economy in the 1990s this performance is quite creditable given the demographic and income elasticity status for food of most of the markets into which Irish processors sell.

However, some industries have failed, to a significant degree, to keep pace with the growth in the general economy and this includes some major sectors. The "laggards" are "Sugar, cocoa, chocolate and sugar confectionery", "Fruit and vegetable processing", "Dairy products manufacture", "Meat processing" and "Grain milling and animal feeds".

The production of the raw materials for sugar and dairy processing are very severely restricted by EU supply-restricting systems and those for meat processing to a lesser degree.

Prepared pet foods improved their relative position by 20 per cent from a small base.

However, the last category in Table 5.2, namely the combination of "Vegetable and animal oils and fats; grain mill products, starches and starch products; homogenised food preparations, and dietetic food; and other foods n.e.c." closely followed by the second-last category, namely "manufacture of macaroni, noodles, couscous etc., tea, coffee, condiments and seasonings" were the star growth performers.

There is, however, a major difference of scale between the second-last and the last categories in Table 5.2. The manufacture of macaroni, etc., tea, coffee and condiments etc. (second-last category), while exhibiting high relative growth remained a relatively insignificant part of the economy and of the total food industry over the data period. Their gross output went from 0.67 per cent of total food processing gross output in 1991 to 1.26 per cent in 1998. At the same time their net output went from 1.2 per cent to 1.7 per cent of total food processing net output over the same period.

The scale figures for the last industry sector in Table 5.2, namely "Vegetable and animal oils and fats; grain mill products, starches and starch products; homogenised food preparations, dietetic food; and other foods n.e.c." are much larger. The gross output of the industries represented by these classifications was 16 per cent of total food industry in 1991 and 27 per cent in 1998.

Correspondingly their net output grew from 41 per cent of food industry net output in 1991 to 58 per cent in 1998. These figures illustrate:

- the combined scale of the industries represented by these classifications
- their extraordinary growth-rate performance relative to food processing in general and relative to GNP
- the disproportionately high net output (value-added) per unit of sales.

Once again, it would be of great interest if a further breakdown were available for these classifications.

Analysis of Change in Value-Added Captured by Dairy and Meat Processing

Dairy Product Manufacturing

The rate of change in the volume of milk produced on Irish farms is applied to the base year net output for dairy manufacturing and a new net output series is generated labelled "scale effect" net output. The difference between the CSO NO and "scale effect" NO is the change in NO arising for all reasons other than change in scale of milk production. This series is expressed as Irp/litre of total milk supplied. These results are presented in Table 5.3.

Table 5.3: Actual and Expected Net Output in Dairy Processing

Year	Change in milk supply compared to base 1991 (%)	Actual Net Output (NO) £000 "A"	Expected NO (Scale effect) £000 "E"	"A-E" NO £000 "A-E"	Rate of change in "A-E" to base year Irp/lt.	Annual rate of change in "A-E" Irp/lt.
1991		419,851				
1992	+0.889	488,944	423,583	+65.36	+1.28	+1.28
1993	-0.178	496,741	419,104	+77.64	+1.54	+0.26
1994	+1.146	377,782	424,662	-46.88	-0.92	-2.46
1995	+1.482	482,022	426,073	+55.95	+1.09	+2.01
1996	+1.640	527,306	426,734	+100.57	+1.96	+0.87
1997	+0.869	492,564	423,500	+69.06	+1.35	-0.61
1998	-2.3	471,930	410,194	+61,74	+1.25	-0.10
Average						
1992 –98						+0.18

With the exception of 1994 the changes in the A-E value-added both in £millions and on a per-litre-of-milk basis relative to the base year of 1991 were positive. On a *year-on-year* basis the annual increase amounted to +0.18p per litre. On an intuitive basis one is inclined to say that this is a modest increase. Since any scale effect is excluded it necessarily represents the change in monetary return per litre arising because of changes in product mix, distribution, promotions and possible change in producer milk price. It is estimated at current prices and therefore includes any changes in the unit price of the services that were employed in generating the increased value-added of 0.18p per litre.

A common approach to the estimation of margins or values added of any kind at constant prices is that of double deflation (United Nations, 1993).Using that approach both the revenue and the input cost are deflated separately by what are deemed appropriate product price indices. O'Connell (1979) argued that the use of product price indices in either a single or double deflation system is inappropriate and may lead to misleading results. The value-added entity represents a *value* of services and if it is to be expressed in constant price terms should be deflated by an appropriate price index of services. Such indices are not published and would have to be estimated. The services involved would derive from labour and capital. The capital component would, very likely, pose severe practical difficulties in the estimation of a meaningful service price index. The exercise is not attempted here. It is felt that, if it is to be attempted, it is best done as a stand-alone exercise.

The data period of this exercise viz. 1991–98 was one of relatively low general Irish inflation averaging just over 2 per cent per year (Irish Statistical Bulletin, September 2000).

Unit labour cost in dairy product manufacture increased by a little under 3 per cent per year (Irish Statistical Bulletin ibid.). It may be that the level of capital investment in dairy processing, while relatively low, (Personal communication Irish Co-operative Organisation Society) gave rise to enough productivity gains to at least offset this fairly modest labour cost increase and give a position of no change in the overall unit cost of dairy processing services.

It may be that there would be very little difference between the estimated value-added figure whether expressed in current price or constant price terms for this particular data period. Admittedly this is a rather weak and speculative conclusion.

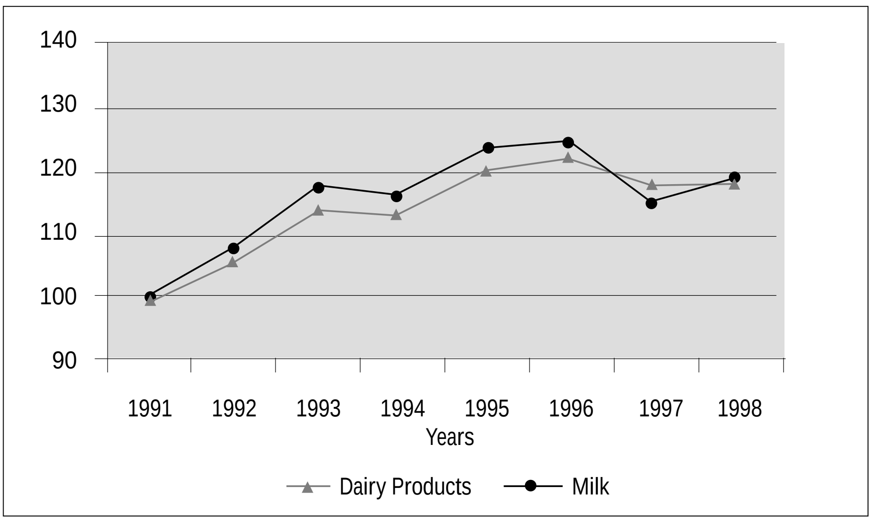
The estimation of the A-E value figure as above provides an absolute figure expressed as p/litre or in £millions. This approach has numerous advantages and opens up many possible avenues for further exploration and research. If a similar exercise were done for other countries, e.g. New Zealand, Netherlands, Denmark, one could reach some useful conclusions regarding the rate of change in an important performance measure in this country compared with our competitors. Furthermore if the total figure could be broken down into its components viz. those components arising from change in product mix, distribution strategies and promotional activities one could begin to explain the basis for different performance as between countries.

The results for value-added gain as expressed here could, when combined with data relating to expenditure on such activities as product development and promotional expenditure, facilitate the quantification and assessment of benefit-cost outcomes.

As defined earlier, any measure of value-added is the difference between a revenue and a cost figure. It is possible therefore that the estimated gain in value-added by the dairy processing industry may be achieved by reducing the price of inputs used in dairy processing or that the value realised for these gains is all retained by processors. It is also possible that the gain in value-added may be greater than that retained by the sector and that the difference is paid out to producers who thereby benefit from the value-adding activities of the processing sector through higher prices for milk. This latter effect which might be expected to be more relevant where the processing sector is largely comprised of farmer-owned co-operatives is not captured in the present exercise.

Raw milk is by far the most important input, the production of which provides incomes for many thousands of dairy farmers. It was felt that an analysis of the relationship between milk prices paid to producers and the prices received by dairy processors over the data period would add further to an understanding of the value-creating and -sharing process. The position is presented graphically in Figure 5.1.

Figure 5.1: Price Movements: Dairy Products and Milk



The data for Figure 5.1 were taken from the Irish Statistical Bulletin. The data for dairy products represent price movements as experienced by Irish dairy processors. Those for milk represent price movements as experienced by Irish dairy farmers. Milk prices at farm level are determined by market prices and by EU export refunds and product subsidies paid to processors. The price data relating to processors are collected from processors by the Central Statistics Office (CSO). For those processors who sell through the Irish Dairy Board their "prices" are inclusive of EU refunds and product subsidies. This is not so for those who sell outside of the Board. Because of this there is a degree of non-comparability between producer and processor prices.

However, since the data are expressed in index number form and thus represent only movement in prices, they are likely to exhibit less error than absolute price data. In any case the graphs in Figure 5.1 behave quite well and in the firm belief of not fixing it unless it is broken the data are not subjected to further scrutiny.

Conceptually the graphs in Figure 5.1 are a diagrammatic method of presenting the story relating to value-added in the dairy industry.

The nature of the relationship between processor and producer prices provides some insights into the source of processor price gains.

If the dairy processing sector were increasing value-added because of activities on its part which require the allocation of resources at processing level, it would be expected that at least a proportion of any price increase thus earned would go to processors only. While such activity could have the effect of increasing producer prices it would certainly entail a widening gap between the price as received by processors and that received by producers.

If, however, a price increase is of a general market nature requiring no particular resource allocation on the part of the processing sector then it would be expected that a greater proportion of such price increase would be reflected in an increase in producer milk price. This latter effect is dependent on the processing margin being more of an absolute rather than a percentage margin in nature.[2]

On the basis of the movement of processor and producer prices as shown above it appears that processor price increases have largely been of the general market nature rather than having been earned by particular actions of Irish dairy processors.

This result is also consistent with the relatively low rate of increase in value-added (NO per litre) as estimated separately in Table 5.3.

Notwithstanding a low rate of growth in value-added, it may nevertheless be somewhat re-assuring from a dairy farmer perspective, to observe in Figure 5.1, that in general terms at least, there is quite a close correlation between price movements as experienced by Irish dairy processors and those experienced by Irish dairy farmers for their milk.

Finally, it is worth noting that with one exception the price changes in Figure 5.1 are all positive. The fairly substantial price drop from 1996 to 1997 coincides with a significant fall in A-E NO in 1997 as estimated in Table 5.3. The 1998 NO in Table 5.3 shows a further small reduction while Figure 5.1 shows both prices increasing. However, the small reduction in processing NO could have been brought about by the fact that the milk price increased more than the processed product price in 1997–98.

Meats

A similar exercise is undertaken below for meats as was undertaken for dairy products. Data are presented in Table 5.4.

Table 5.4: Rate of Change in Slaughterings, Actual NO, Expected NO, Actual-Expected NO

Year	Change in slaughterings: all compared to base 1991 (%)	Actual net output (NO) £000	Expected NO (Scale effect) £000	"A-E" NO £m
1991	---	238,785	---	0
1992	+2.9	247,501	245,710	+1.79
1993	-0.7	255,817	237,114	+18.70
1994	-6.7	248,053	222,786	+25.27
1995	-2.4	288,122	233,054	+55.07
1996	+4.5	309,829	249,530	+60.30
1997	+8.5	305,514	259,082	+46.43
1998	+13.4	307,999	270,782	+37.22
Av. for period	+2.79	275,203	245,437	+34.97

The rate of change in tonnage of slaughterings is applied to the base year net output thereby generating a new series of expected net output which is an estimate of what net output would have been if nothing else had changed other than the tonnage slaughtered. The difference between this and actual net output (A-E NO) is the amount of net output arising for all other reasons, e.g. new product development, price gains of a general market or specific Irish industry nature etc. This averaged +IR£34.97 million/year in the data period. It reached a peak of +IR£60.30 million in 1996 and declined thereafter.

While the data refer to all meats the predominant meat is beef, which on a volume basis accounted for 68 per cent of all slaughterings in 1991 and 63 per cent in 1998 (*Animal Production*, 2000). Subsequent to the BSE crisis of 20 March 1996, the proportion of Irish beef marketed in the EU as a whole dropped from its peak figure of almost 60 per cent in 1995 to 40 per cent in 1996 (Trade Statistics). In addition, consequent on re-nationalisation of EU markets the Irish industry suffered a severe loss of better paying accounts within the EU for those sales still being made within the EU (Personal communication, Bord Bia).

In Table 5.5 the A-E NO estimates are expressed relative to tonnage of slaughterings.

Table 5.5: A-E Expressed Relative to Tonnes (cwe) Slaughterings

Year	"A-E" NO/Kg slaughterings. All compared with base yr IR P/kg	"A-E" NO/kg slaughterings. Year-on-year comparison IR P/kg
1991	0	
1992	+0.19	+0.19
1993	+2.0	+1.78
1994	+2.9	+0.91
1995	+6.1	+3.3
1996	+6.3	+0.54
1997	+4.6	-1.39
1998	+3.6	-0.88
1992-98 av.		+0.64p/kg

As can be seen in Table 5.5, gains in value-added per kg of meat were made from 1991 through 1996, although the figures are somewhat erratic. The gains spilled over from the peak of 1995 into 1996 albeit in a modest way while thereafter there was an actual loss in value-added per kg. The average year-to-year change for the period was +0.64p/kg. This compares with an average farm price of IR£2.15/kg carcass weight for heavy steers. The annual growth in value-added amounts to 0.3 per cent of the average farm price for the period.

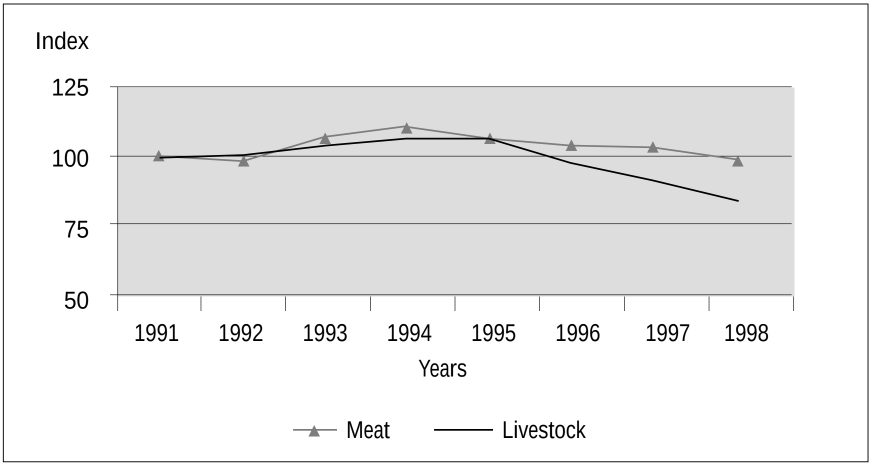
As discussed in the context of dairy processing above, the results for meats would be of greater utility if similar results were available for other countries. Likewise it would be of interest and benefit if the individual components of the gains and losses in value-added shown above were estimated and related back to actions and costs incurred by the Irish industry in the achievement of gains.

As was done for dairying, an examination of the relationship between ex-factory product prices and farm-level raw material (livestock) prices is carried out to test the possibility that processors might be increasing their value-added "at the expense" of Irish farmers.

It might be considered that this is more of a possibility in the meat industry than in the dairy industry given the long-held suspicions of farmers and their associations in relation to Irish beef processors, culminating in a blockade of beef factories in January 2000.

In addition, the Irish meat processing sector is predominantly in private ownership. The beef processing sector is over 95 per cent privately owned with less than 5 per cent in farmer ownership, which might be thought by some to be more likely to give rise to "rip-off" farmer prices than would occur in the dairy sector. Figure 5.2 shows prices as received by Irish meat processors and by Irish livestock producers. Both price series are published in the Irish Statistical Bulletin.

Figure 5.2: Irish Industrial Producer Meat Prices and Irish Livestock Prices



As can be seen the relationship between movement in ex-factory meat prices and Irish livestock prices is quite close from 1991 through 1995, coinciding approximately with the period of growth in the A-E NO, but diverges progressively from then onwards. At first sight this is puzzling and, especially if you are a livestock farmer, even alarming. However, there are some further factors to be considered which can shed some light on this.

Firstly, because of the fact that there is no centralised marketing agency akin to the Irish Dairy Board operating in the meat sector, prices as received by meat processors and as recorded by the CSO are totally exclusive of EU export refunds (Personal communication CSO). On the other hand, prices as received by livestock farmers reflect EU refunds for both meat and livestock exports to non-EU destinations. The level of export refund per tonne of meat and meat equivalent of live exports declined significantly in 1997 and 1998 in the data period.

To make the comparison more valid therefore one must either take changes in refunds out of livestock price changes or add them to meat price changes and also allow for live exports. The latter was attempted here.

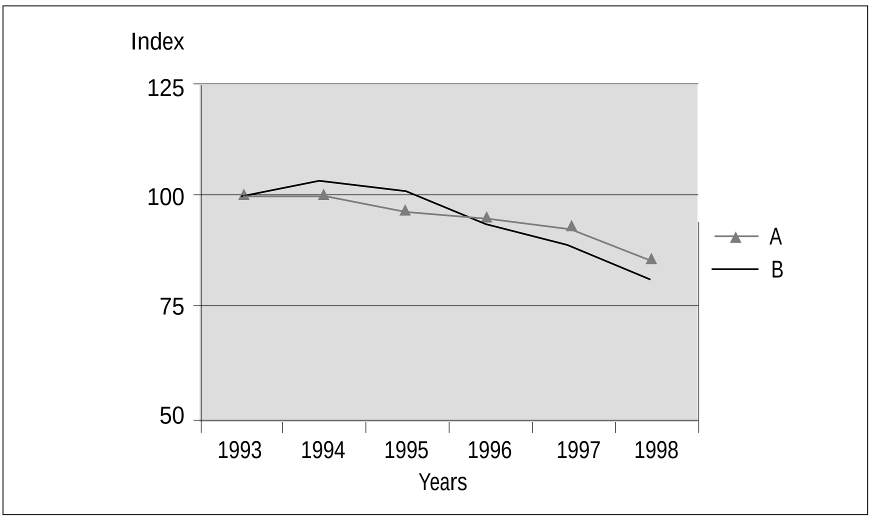
The methodology involved splicing an index number for export refunds onto the published CSO meat price index to give an index of returns incorporating both market price and EU refunds. Two weightings were used – a base or 1991 weighting and a current or 1997 (1998 not available at time of writing) weighting where the weightings represented the proportion of carcass weight equivalent of combined meat and live exports exported to EU and non-EU destinations. The former was applied to the published CSO price index while the latter was applied to an index of export refunds.

In turn, the index of export refunds was estimated by taking total meat and live exports refunds (DAFRD) received by Ireland, dividing by the carcass weight equivalent of Irish meat and live exports to non-EU destinations (Animal Production, 2000) and expressing the result in index number form.

There appeared to be some problem with the export refund data for the years 1991 and 1992 which was not resolved at time of writing. Accordingly the exercise is confined to the years 1993–1998, which is reasonably satisfactory for present purposes since the divergence in Figure 5.2 which it is hoped to explain commenced in 1996.

Figure 5.3[3] compares the estimated movement in processor/live exporter returns with those in the CSO published livestock price (more correctly "returns") using 1991 weightings as described above. In 1991, 76 per cent of Irish meat and meat equivalent of live exports went to EU markets and 24 per cent went to non-EU markets.

Figure 5.3: Meat Processor/Live Exporter (A) and Livestock Farmer (B) Returns

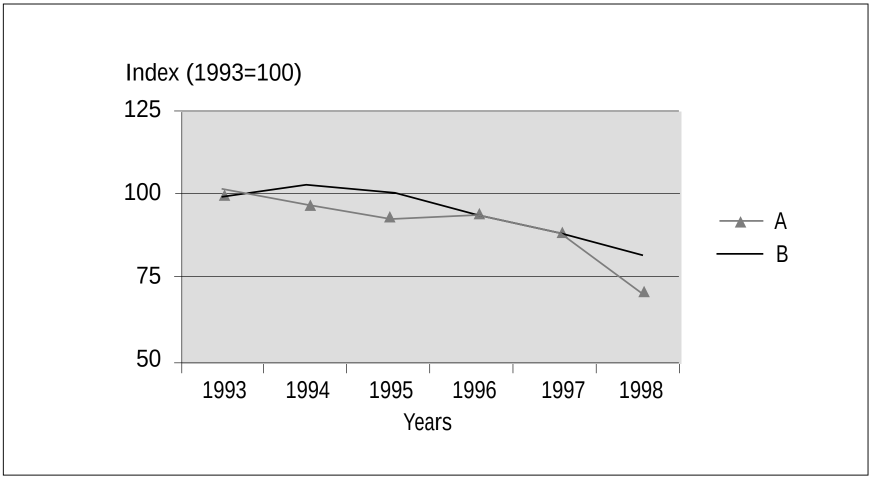


It can be seen in Figure 5.3 that when export refunds are taken into account the movements in processor/live exporter returns and those of livestock producers are much closer than when the comparison is made simply between ex-factory processor market prices and producer returns as was done in Figure 5.2.

It is also relevant to point out that a charge for the disposal of specified risk material was introduced in 1996 which is not dealt with here but would have the effect of further closing the gap between the two graphs.

The effect of changing the weighting from a base weighting of 1991 to a more current weighting of 1997 can be seen in Figure 5.4.

Figure 5.4: Returns of Meat Processors/Live Exporters (A) and Livestock Farmers (B)



In 1997, a higher proportion of combined meat and livestock exports went to non-EU destinations than in 1991. In 1991, 24 per cent went to non-EU; in 1997 the corresponding figure was 32 per cent. The influence of the greater importance of non-EU trade in the 1997 weighting would have the effect of giving greater impact to the refund cuts which occurred in 1997 and 1998. The graphs in Figure 5.4 using this weighting system show processor/live exporter returns falling faster from 1997 to 1998 than those for livestock farmers while that was not the case when the 1991 weighting was used.

While the exercise attempted here is undoubtedly crude and capable of refinement, the authors are reasonably satisfied that the evidence is consistent with the thesis that, in the data period, the change in value-added in the Irish meat processing sector was not brought about at the expense of Irish livestock producers.

However, it is an area of much interest and importance, especially to producers, and further work could profitably be done to develop it conceptually, to refine the data and methodology, and to bring the exercise more up to date if possible.

Summary and Conclusions

While not keeping up with the extraordinary growth of the Irish economy throughout the 1990s, Irish food processing nevertheless has grown at what, in other periods, would be regarded as a relatively high growth rate. This growth has not come from the large traditional sectors such as dairy processing, meat processing or sugar and related confectionery but from an assortment of newer type sectors. These include macaroni, noodles, couscous, tea, coffee, condiments, seasonings, vegetable and animal oils and fats, grain mill products, starches and starch products, homogenised food preparations, dietetic food and other foods n.e.c.

A new approach to the measurement of value-added was developed in this paper and applied to two relatively large processing sectors that are large scale purchasers of major products of Irish agriculture. The concept chosen was that of net output rather than gross value added. Figures for both are published by the Central Statistics Office. The net output measure was chosen because it is a wider and more complete measure of the total level of processing services attached to raw materials than is gross value added.

Changes in Net Output arising for reasons associated with changes in scale of the main agricultural raw material input were estimated and excluded thus giving a residual net output which arose for all other reasons. Change in this residual Net Output was expressed on a per-litre-of-milk and per-kilogram-of meat basis. If it were expressed in constant price terms it could be termed a measure of change in the intensity of processing. An increase in this ratio would indicate an increase in processing intensity and a decrease would indicate a decline in processing intensity.

Both dairy and meat processing showed an increase, on average, in the ratio at current prices in the period 1991–98. In the absence of standards for comparison it is not possible to evaluate the significance of these increases rigorously, but on an intuitive basis they appear small. The average annual gain ranged from approximately 4/5 of 1 per cent of the average price for milk over the period to approximately 1/3 of 1 per cent of the average price for meats.

The figure for dairy products was positive in 1992, 1993, 1995, 1996 (reaching a peak in 1995, declining but positive in 1996) and negative in 1997 and 1998. For meats it was positive in 1992, 1993, 1994, 1995, 1996 (reaching a peak in 1995, declining but still positive in 1996) and was negative in 1997 and 1998.

With the exception of 1994 the pattern of results is similar for dairy and meat products. For both dairy and meat processing a reasonably close relationship was found as between changes in ex-factory prices and farm-level prices for milk and livestock respectively.

Further work could usefully be done in relation to measuring changes in processing intensity at constant rather than at current prices; making inter-country comparisons; evaluation of the extent to which gains are general market gains or specifically Irish; decomposition of changes in processing intensity (either in constant or current price terms) into its components; and evaluating the return to Irish expenditure designed to increase those components. However, the data and conceptual and methodological difficulties of doing this are formidable.

APPENDIX 5.1

NACE Codes and Official Titles of Food Industries

NACE Code	Title
1511,1512	Production and preserving of meat and poultrymeat
153	Processing and preserving of fruit and vegetables
155	Manufacture of dairy products
1571	Manufacture of prepared feeds for farm animals
1572	Manufacture of prepared pet foods
1581,1582	Manufacture of bread, fresh pastry goods and cakes, rusks and biscuits, preserved pastry goods and cakes
1583,1584	Manufacture of sugar, cocoa, chocolate and sugar confectionery
1585,1586,1587	Manufacture of macaroni, noodles, couscous and similar farinaceous products, condiments and seasonings; processing of tea and coffee
154,156,1588,1589	Manufacture of vegetable and animal oils and fats; manufacture of grain mill products, starches and starch products; manufacture of homogenized food preparations and dietic food and other food products

1 The authors are grateful for assistance from personnel in a wide range of institutions. These are given in the References at the end of the paper. In particular, Michael Lucey of the Central Statistics Office was of immense help both personally and in directing the authors to other personnel and to relevant publications. In this piece of research, as in others, the personnel of the Central Statistics Office have been outstanding. Errors are the responsibility of the authors.

2 The price movements in Figure 5.1 are, on the whole, supportive of this idea. With an absolute processing margin, then *ceteris paribus* when processor prices increase, producer prices should increase at a greater rate and when processor prices decline, producer prices should decline at a faster rate. This is true for 4 out of 7 of the price changes in Figure 5.1. It is not the case for one, namely that from 1995 to 1996 while there appears to be no difference in two others namely, those from 1993 to 1994 and 1994 to 1995.

3 Base year for Figures 5.3 and 5.4 is 1993 and not 1991 as in previous figures.

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New Consumers and Football Fandom: The Role of Social Habitus in Consumer Behaviour

BRENDAN RICHARDSON*

Introduction

Association football (or soccer) is widely credited with being the most popular sport in the world (Derbaix et al., 2002). Whether that claim is verifiable is not the topic of this paper. What is beyond question is that sports fandom is a source of excitement and pleasure for millions (if not billions) of consumers worldwide, and many of these consumers happily spend much of their discretionary income in the pursuit of their interest (Derbaix et al., 2002; End et al., 2002; Madrigal, 1995; Matsuoka et al., 2003). The loyalty of sports fans as consumers has therefore become firmly established on the academic research agenda in recent years (Kolbe and James, 2000; Mahony et al., 1999; Richardson and Dwyer, 2003).

Fan Behaviour

Cialdini et al. (1976) concluded that basking in reflected glory, or BIRGing (End et al., 2002; Madrigal, 1995), was a key source of pleasure and benefit to the sports fan. BIRGing is the attempted raising of social esteem levels through increased association with highly successful others (Madrigal, 1995). This could be through wearing team apparel after a victory, or verbal association, such as use of the pronoun "we" when talking about the team, again after a victory (Cialdini et al., 1976; End et al., 2002). The tendency to BIRG is partly explained by social identity theory, which proposes that the motivation to boost self-esteem causes individuals to identify themselves strongly with a successful (and therefore positively perceived) group (End et al., 2002). Should the group, or in this case the team, experience failure, then the individual may seek to protect self-esteem through a process termed cutting off reflected failure, or CORFing, which involves disassociating oneself from the losing team (End et al., 2002: Madrigal, 1995).

* *Department of Management and Marketing, O'Rahilly Building,*
University College Cork,
e-mail: brendanrichardson@ucc.ie

Madrigal (1995) suggests that these tendencies (i.e. to BIRG or CORF) help to explain the tendency of 'fair weather' fans to avoid attending matches when the team are going through an unsuccessful period and the increased attendance at matches during a successful period. That in itself is of interest, but it does not explain why many fans continue to attend games even at those times when the team is unsuccessful.

Team Identification, BIRGing and CORFing

Tendency to BIRG or CORF seems to be mitigated by the individual's level of *team identification*:

> Team identification refers to a spectator's involvement with and psychological connection to a sport team. (Wann and Schrader, 2000: 160)

Wann and Branscombe's Sports Spectator Identification Scale, or SSIS (Madrigal, 2000, 1995; Wann and Schrader, 2000), utilises a Likert Scale test to measure the degree of team identification. Other studies (Matsuoka et al., 2003) have used amended versions of this scale to examine the same question, i.e. the extent to which the individual identifies with a particular sports team.

This measure is of interest because of the apparent differences in the behaviour of *high identifiers* and *low identifiers*. High identifiers display a far greater propensity for self-serving bias (team victories explicable in terms of internal controllable factors such as team ability or fans' strong vocal support; defeat explicable through external factors such as cheating by the opposition, poor refereeing or other external and uncontrollable factors) (Wann and Schrader, 2000). They have higher pre-game expectations than low identifiers (Madrigal, 1995, 2003), stronger emotional reactions during a game and are more inclined to engage in 'wishful thinking' and less inclined to be objective about the team's likely future successes (Madrigal, 2003). High identifiers also have stronger intentions *vis á vis* future game attendance (Matsuoka et al., 2003).

High identifiers derive more enjoyment from their fandom than low identifiers:

> … fans who view their association with the team as a more important facet of their self-identity tend to experience greater personal joy and seek greater individual association with the team when it experiences successful outcomes. (Madrigal, 1995: 222)

This greater tendency to BIRG is confirmed by other studies, which have also found that high identifiers have a much lesser tendency to CORF than low identifiers (End et al., 2002; Madrigal, 1995; Matsuoka et al., 2003). This difference in behaviour is not satisfactorily explained in the literature, however, even though some research has examined the issue. Madrigal (1995) suggests that for the high identifier, the team is perceived as part of the extended self (Belk, 1988) which makes CORFing more difficult. End et al. (2002) argue that CORFing may not be an option for high identifiers, who perceive it as disloyal. Alternative tactics are therefore needed. These include attribution of failure to external factors such as poor refereeing. Further research is clearly needed, however.

Self-monitoring

Other research on fan loyalty has investigated the effects of variables such as self-monitoring (Mahony et al., 1999; Richardson and Dwyer, 2003). Mahony et al. found some degree of linkage between high self-monitoring (a willingness to modify behaviour and/or appearance to ensure social acceptance, in this context engaging in team-switching to ensure association with a successful team) and propensity to team-switching among US college students. However, they failed to find any relationship between low self-monitoring and the degree of psychological commitment to the team. A more recent study of soccer fans found no evidence of a relationship between high levels of self-monitoring and team-switching. Soccer fans demonstrated high levels of loyalty irrespective of their self-monitoring scores (Richardson and Dwyer, 2003).

Thus, when we consider that BIRGing does not explain the behaviour of large segments of the fan population, that only fans with low team identification scores engage in CORFing to any significant degree and that other psychological variables such as self-monitoring have to date failed to provide conclusive insights into fan loyalty, it becomes apparent that other variables, indeed other dynamics, should be explored. One such factor is community.

Fandom and the Group

Much of the research on loyalty has focused on fan identification with the team. This has been to the neglect of research on fan identification with other fans. The benefits of close identification with the 'in-group' of fellow fans of their favourite team include higher self-esteem, less depression and higher levels of life satisfaction among other things (Madrigal, 2000). It is possible that the positives of group or fan community membership far outweigh the negatives of team failure. Furthermore, once we acknowledge the reality of group membership, it suggests that factors such as compliance with group norms, out of a need or desire for ongoing acceptance and group membership, may be important determinants of fan behaviour (Madrigal, 2000).

Madrigal (2000) suggests that high identifiers are most likely to internalise the values of the group. He proposes group camaraderie as a consumable object. "Ultimate loyalty" towards this object arises when it becomes part of the extended self (Belk, 1988). Team affiliations become resistant to change because both team *and* fan community have become part of the extended self.

This offers a more insightful explanation of fan loyalty than the proposal that Chicago Cubs fans stayed loyal to a mediocre baseball team simply because they were high identifiers (Madrigal, 1995: 210).

Group Processes in Consumption of Sport

Holt (1995) and Madrigal (2003) noted that sportsmen's performances are evaluated against norms and expectations developed over time (consumption as assimilation). These expectations affect fans' sense of satisfaction with team performance. Group dynamics are central to this process, as they are to other aspects of the baseball fan consumption experience. Consuming as play and consuming as classification (Holt, 1995) involve high levels of interaction and identification with one's fellow fans. Derbaix et al. (2002) have found that these group processes play an important role among soccer fans. A sense of community, of group identity, processes and experiences, may be central to the phenomenon of soccer fandom.

It is unsurprising, therefore, to observe the growing calls in the literature for a more contextual approach to the study of sports consumption, such as a greater focus on the social milieu in which it takes place (Stewart et al., 2003), investigation of the effects of emotional contagion (Madrigal, 2003) and of the effects of group dynamics on fan loyalty (Kolbe and James, 2000). For example, the sense of community that fandom confers is itself a motivating factor in supporting a team (Kolbe and James, 2000). We therefore turn to the work of Maffesoli (1996), Cova (1997) and others, in order to explore this phenomenon of fan loyalty from a theoretical perspective appropriate for group consumption.

Communities of Consumption

Of particular interest in the literature on post-modern communities of consumption is the suggestion that "the link is more important than the thing" (Muniz and O'Guinn, 2001). Cova (1997) speaks of the "desperate search" for social links. Brand choice is increasingly dependent on perceived social linking value. Consumer choices are made on the basis of opportunities for social interaction and participation in community that certain brands can provide. In this way, public icons, be they celebrities or football teams, increasingly function as totems around which consumers can congregate to share passion and emotion and thereby experience feelings of unity, of communitas, otherwise absent from their lives (Cova, 1997; Maffesoli, 1996). That passion, ecstasy and a sense of communitas can be experienced through supporting a football team has been established by a number of studies, the work of Derbaix et al. (2002) being but one example.

Of course, while many football fans may be supporters for this reason, i.e. to experience community, not all fans could be described as "desperately seeking" community in Cova's sense. The "lads" (King 1995, 1997) are "traditional" fans, socialised into their choice almost from birth. They have not made a calculated, post-modern, neotribal choice of which team to support. Yet they form a specific subculture of consumption, which renders a group perspective appropriate for research on their form of fandom. Thus, whether we study traditional or "new consumer" fans (King, 1995), we are likely to find that membership of the fan community will "cement" member loyalty towards the brand. The brand becomes an intrinsic part of the intra-member relationship. It is the tie that binds (Maffesoli, 1996). To walk away from the brand is to walk away from the set of social relationships and is thus practically unthinkable (Muniz and O'Guinn, 2001; Schouten and McAlexander, 1995).

While there has been some discussion in the literature as to whether football fandom is subcultural (Giulianotti, 1999; Marsh et al., 1997; Merkel, 1999) or neotribalistic in nature (Alabarces, 1999; Cova, 1997; Crawford, 2000: 222), it is not, for the purposes of this study, a question of whether football fandom is a subculture, brand community or form of neotribalism, but rather of how the internal system of *cultural capital* (Bourdieu, 1984) works.

Cultural capital is present in all forms of consumption community (Crawford, 2000: 224–8; Muniz and O'Guinn, 2001; Thornton, 1997: 200). An exploration of cultural capital can therefore generate highly accurate and meaningful insights into the behaviour of all actors within the football fan community, irrespective of whether that community is a subculture, brand community or neotribal configuration.

Fan Authenticity and Cultural Capital

One of the perennial issues among football fans and academics alike is the issue of fan authenticity. Some argue that all "new" fans are passive rather than participatory and therefore are not "real" fans (Redhead, 1993; Giulianotti, 1999). Others, for example Crawford (2000: 45–9), dismiss the contention that one particular definition of fandom can be privileged over another. King (1995, 1997) argues that, as fandom is itself an imagined concept, anyone who imagines themselves to be a fan is therefore, essentially, a fan. Both King and Crawford, however, overlook the reality that some fans *are* perceived by "novice" fans as possessing greater authenticity. The utilisation of a specific system of cultural capital (Bourdieu, 1984) by baseball fans to make such distinctions between themselves and others (Holt, 1995) suggests that a similar system, or systems, may be present in the football fan community.

Cultural Capital

Cultural capital functions as a means of preserving distinctions – not only between social classes, but between categories of fans as well. Cultural capital is a knowledge of how to consume, how to appreciate; and to understand what is worthy of appreciation and what is not one must have specialist knowledge, vocabulary, a way of perceiving that allows one to fully appreciate, understand

and categorise cultural (and other) objects in a manner that others cannot. This specialist knowledge is organised in perceptual schemes termed 'programmes for perception' (Bourdieu, 1984: 1). How this operates in the context of baseball fandom is outlined by Holt (1995: 7–10). Knowledge of *how* to perceive baseball allows fans to distinguish between themselves and others (Holt, 1995: 10), between those with strong allegiance to the team and those with none, for instance. Within the community, this knowledge can be manipulated to impress others (and thereby attain higher social status). Thus, the concept of cultural capital represents an appropriate conceptual framework with which to explore the phenomenon of football fandom.

Methodology

The appropriateness of ethnography as an approach for studies of group consumption is well established in the literature (Celsi et al., 1993; Crawford, 2000; Holt, 1995; King, 1995; Schouten and McAlexander, 1995). Thus, ethnographic techniques such as non-participant observation can be used. The initial stages of this study involved non-participant observation in a number of Internet football fan forums, as well as participant observation at soccer matches.

Commencing "Netnography"

Kozinets (2002) recommends observation of online forums with (a) high research-question relevance, (b) the highest levels of traffic, (c) high numbers of discrete posters, (d) the richest data and (e) the greatest level of between-member interaction of the type required by the research question. The forums monitored thus far, in adhering to most of these criteria, have proved very useful to the process of mapping out football fan culture and recording apparent patterns in fan behaviour. By recording those things that "real" fans say, do and value, one can begin to construct an understanding of the fans' system of cultural capital.

The monitoring period was timed to commence with pre-season for the English FA Premiership. This is a particularly significant time for football fans, the only time of the football season where all can delude themselves that this indeed will be "our" year, because "nothing has happened yet (this season) to disillusion us":

> At the start of August we are all certain our strikers can manage overhead volleys into the top corner from 30 yards; our defenders are only waiting for the chance to recreate that Bobby Moore tackle; and that kid from the youth team really is set to be the next Zinedine Zidane. (*Four Four Two*, Sept. 2000)

Citynet, an unofficial eircom league forum for fans of Cork City FC, was also monitored. Pre-season for eircom league clubs was approximately six months prior to the start of the study, so not all categories of issues encountered were the same as the pre-season issues discussed on Premiership forums. A wide range of fan-related issues were discussed on Citynet during this time. The issues that troubled or excited Cork City fans were the same issues that seemed to affect football fans at much bigger clubs: questions relating to the manager's or the board's competence were debated; the danger that some other club was about to "poach our star striker" was discussed; the referee's performance in a particular game was criticised and so on. For that reason, monitoring of the site was continued throughout the initial phase of the study.

Football Fan Forums in the Pre-Season Period

One thread (Sunday 27 July) on Red All Over The Land (RAOTL), an unofficial Liverpool fans' website, contained a typical mix of speculation and pre-season optimism. Most of the speculation was concerned with the football player transfer market and the teams' prospects for the forthcoming season. Fans exercised their cultural capital through being able to speculate knowledgeably and expertly on these topics. Being able to speculate in this manner distinguished "expert" fans from non-experts, those with social currency/cultural capital from those without it.

That this is a recurring pattern rather than a once-off discussion is illustrated by discussions on the forum at other times. The fans on RAOTL often discuss items from the club's official website, such as opinion polls nominating the club's all-time best starting XI. When one official poll resulted in Steve McManaman being nominated in midfield, the fans on RAOTL suggested that "if you know your history" (RAOTL forum, November 2002), a number of other players could have been selected ahead of McManaman. What this illustrates, as much as anything else, is the fans' desire to distinguish between themselves and the type of "novice" fan who does not know very much about the club's history. Knowledge of the other players functions as a form of cultural capital to this end.

Season Tickets

During pre-season, a discussion took place regarding the delays some fans were experiencing in having their season tickets renewed. This included some criticism of the club's ticket office and its operation of the season ticket renewal system. While this discussion in itself gave no definitive indication of the presence of cultural capital, subsequent discussions regarding the waiting list for season tickets strongly indicated that season tickets are a repository of cultural capital. To be a season-ticket holder is to be regarded as one of the inner circle of elite fans. If not a season-ticket holder, one at least should be on the waiting list. To be able to relate to other fans about this issue and compare experiences seems to form a key part of the system of social currency or cultural capital among the fans. It might also be speculated that the season ticket, as a form of hierophanous sacred consumption object (Belk et al., 1989), bestows cultural capital on the holder because it marks them out as one of the elite.

Loss of Cultural Capital

Issues from the previous season were very much to the fore for some fans. In early August 2003, fans on the *WestHammersFC* website forum were busy arguing over who was to blame for West Ham being relegated from the Premiership. Many of them blamed the manager, often the scapegoat of first resort for football fans everywhere (another alternative tactic to CORFing for high identifiers, perhaps).

The fans were also deeply upset about the loss of star players to rival clubs. King (1995, 1998) has argued that male solidarity and pride play a central role in traditional fandom. Losing star players to rival clubs is a deep blow to such pride and resulting feelings of hurt and embarrassment doubtless contribute to various forms of behaviour such as protesting, returning season tickets and so on.

In both cases (i.e. relegation and loss of players to other clubs), what the fans may have experienced was a loss of cultural capital. Participation in the Premiership provides opportunities for one's team to play against football's elite clubs. This in itself provides fans with opportunities for the acquisition and utilisation of cultural capital. Match programmes and ticket stubs for games against the likes of Manchester United or Arsenal are tangible proofs of one's bona fides as a fan and concrete evidence of the experiences the fan can relate to others. Relegation to a lower division, where opposition is provided by clubs such as Grimsby Town, is rather less prestigious and lacks the capacity to confer distinction on the fan. Being able to claim that you "… were there the night we beat Grimsby …" may not confer the same level of social currency as being able to reminisce about being in the crowd for the match against Chelsea. Hence some loss of cultural capital is experienced, which might help to explain reduced consumption levels on the part of some fans. Conversely, it is also possible that the ticket stub from the Grimsby game might be *higher* in cultural capital, as it implies the holder is a "true blue" fan, i.e. present for both unglamorous as well as glamorous fixtures.

"The Scum"

This post (name withheld[1]) is from the Cork City FC unofficial website, Citynet (Monday 14 July):

> "When we playing the scum?"

This message was posted without any further explanation or indication as to who the "scum" were. It was an enquiry as to whether a date had been arranged for a previously cancelled league match against Shamrock Rovers. The lack of regard for Shamrock Rovers among Cork City fans is readily apparent from the fact that nobody needed to be told who the "scum" were. The poster received several replies without the name "Shamrock Rovers" being mentioned once. Across football fan terrain in general, the identity of the "scum" may vary but the idea that they are "scum" does not. Arsenal fans understand it to refer to Tottenham Hotspur and vice versa; Liverpool fans usually understand it to mean, not their near neighbours Everton, but Manchester United.

This indicates that shared meanings are understood within the community associated with a particular club. Knowing who the "scum" are is a fundamental part of the system of social currency or cultural capital within any team's fan community. Tickets for matches against the "scum" will be sought after more than tickets for other matches; anecdotes from matches where "we" beat the "scum" will be more highly valued; and victories over the "scum" are more likely to be subsequently celebrated in song than victories over other clubs. This points to the pivotal role played by particular rival clubs in the fan community's system of cultural capital. Knowing who to derogate, how to derogate them and why they are to be derogated helps the community to define who they themselves are, by clarifying who they are not (Muniz and O'Guinn, 2001).

Other Research: Waterford United AFC v Cork City FC, Friday 18 July 2003

Attendance at away matches is often regarded (anecdotally at least) as proof of one's bona fides as a genuine fan. Travelling to the match between Waterford United and Cork City represented a chance to engage in some participant observation at an event (i.e. an "away" fixture) regarded by members of the Citynet forum as being higher in cultural capital than attendance at a "home" fixture. The "real" fans are those who go to away games and give strong vocal support to the team for the full ninety minutes of the match. A two-fold aspiration operates, the first dimension being greater authenticity (the "cultural capital" acquirable through attendance at an away fixture) and the second being the desire to be with other "real" fans, to experience "consciousness of kind" (Muniz and O'Guinn, 2001), to be with like-minded others who know the words of *all* the songs, not just one or two chants, and sing them throughout the game, thereby supporting the team in a more meaningful manner. The fact that such activities are high in cultural capital among the community of hard-core fans explains the desire of neophyte hard-core fans to participate in such activities.

Arriving at the Ground

The experience of actually going through the turnstiles at a football ground is an important moment for the fan. It is where the ritual occurs of handing in the match ticket, receiving the ticket stub in return and passing through the portal from the world outside into the world within. You anticipate the first sight of the football pitch and the players and the sound of the crowd. It is a moment when you leave behind the outside world (and your normal persona) and cross over to a location where your displaced meanings (McCracken, 1988: 106–11) are accessible for a short time. All of these factors help to explain why actual match attendance is so much higher in cultural capital than simply viewing matches on television (and match attendance thereby confers higher levels of cultural capital on the fan, also explaining the level of demand among Irish consumers for trips to Old Trafford, Anfield or Celtic Park).

Agony, Ecstasy and Community

In the closing stages of the match, as Cork City clung to a one goal lead, a defensive error led to Waterford scoring an equalising goal. Shortly afterwards, Waterford went on to grab the proverbial late winner from the penalty spot, sending the home crowd into raptures. This incident provides further evidence of the ability of live football to affect the emotions of the fans. For ninety minutes, life is reduced to a set of simplistic ideas, where everything is black and white. Football fans tend to respond in a highly ritualised manner to the referee. In this case, even though the player's offence was clearly visible, the Cork City fans reacted almost violently to the referee's decision. This suggests a ritualised and emotionally charged (rather than objective) response. This would in turn suggest that what occurs may be learned behaviour, where the group has effectively "self-regulated" with regard to the type of response that is appropriate in this type of situation (Crawford, 2000: 161). By conforming to the behaviour deemed appropriate by the group, fans are effectively demonstrating the existence of a habitus (Bourdieu, 1984) which governs their conduct. In addition, by their participation in these rituals, even neophyte fans can experience meaning transfer and thereby attain a deeper sense of community membership as part of their own identity (McCracken, 1988: 87). Football fans seem to derive enjoyment from these crazy rituals, perhaps because they effectively constitute a "script" that is ritualistically acted out every week or every fortnight, providing a catharsis from the stresses of post-modern life. Maybe the referee's decision, or even the match result, have not gone your way, but you have still had the benefit of participation in the ritual. Finally, while the joint participation acts as an affirmation, a reassurance, of community membership, related consumption objects, such as club shirts or scarves, are subtexts, or ritual artefacts, which enable the consumer to participate in and feel a part of that community.

Conclusion and Research and Marketing Implications

This paper has provided preliminary evidence of the community-related nature of football fandom and evidence that membership of that community is a primary shaper of the fan's consumption patterns. The evidence presented here supports the hypothesis that a system of cultural capital is not only present within the fan community, but that this community-specific system strongly influences and shapes the fans' consumption in specific ways. As the study develops and more of the habitus is mapped out, the manner in which the behaviour of fans is affected by the underlying system of cultural capital that permeates the entire culture, and how this dictates their actual purchasing patterns and other consumer behaviours, will become more apparent.

One highly interesting marketing implication thus far is that while Matsuoka et al. (2003) for example, call for marketers to focus on moving consumers up the *team* identifier scale, a stronger response in terms of long-term fan loyalty might be better obtained by attempts to move fans up an alternative scale, that of *fan community* identification. A sense of affiliation to the fan community might prove to be the stronger bond in the long term. Thus (building on Madrigal's proposal of fan cameraderie as consumption object embedded in the extended self), it is suggested that the fan's loyalty can be assured provided a sense of community membership is cultivated. Therefore, football marketers may have much to learn from studying the "side bets" that act as barriers to exit among members of the Harley Davidson community, for example (Schouten and McAlexander, 1995). What are the equivalent side bets that keep football fans together as a community? Which of these side bets are highest in cultural capital and therefore offer greater potential as exit barriers? Or can we even assume such a relationship? These and other pertinent questions can only be answered by further research, which will contribute not only to the debate on sports fandom but also on the role of cultural capital in structuring neotribalistic consumption.

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1 For the purposes of this paper, discussion threads have been analysed without the use of verbatim quotations, because individual posters have not as yet been asked for their permission to quote them.

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Do Value Stocks Outperform Growth Stocks around the Release of Firms' Financial Results? Some Preliminary Evidence from the Irish Stock Exchange

PAUL RYAN* AND RASHAD HAJIYEV**

Introduction

The extant literature, predominantly US based, suggests that value strategies produce superior returns.[1] However, the interpretation of the nature of these superior returns remains an unresolved issue. One argument is essentially that the markets are efficient and that the superior returns to value stocks are driven by fundamental risk factors. However, Lakonishok, Shleifer and Vishny (1994) and La Porta, Lakonishok, Shleifer and Vishny (1997) suggest there is little evidence financial ratios such as low market-to-book are riskier based on conventional measures of risk. They argue instead value stocks are underpriced relative to their risk characteristics and are potentially subject to behavioural and institutional biases resulting in investors making systematic errors in pricing stocks. They argue investors overestimate the future growth potential of growth stocks and underestimate the corresponding growth potential of value stocks and tend to extrapolate past performance too much out into the future. Gradually investors begin to realise that past performance is not sustainable and prices begin to mean revert. In other words value stocks provide superior future returns because the market only slowly realises that earnings growth rates for value stocks are higher than initially expected and conversely for growth stocks.

The evidence as to whether past growth in earnings is a good predictor of future earnings growth for example is mixed. Little (1962) finds that earnings changes follow a random walk with earnings growth rates being predictable for only one to two years out into the future. Fuller, Huberts and Levinson (1992), in contrast, find that earnings changes do not follow a random walk as investors can forecast relative growth rates reasonably well. However, they argue that it

* *Department of Banking and Finance, University College Dublin*
** *C/O Department of Banking and Finance, University College Dublin*

is questionable as to whether the size of the price/earnings differential between value and growth stocks is too big to justify the expectation that past growth differences will persist long enough to capture the differences in prices paid for value and growth stocks.

In this paper we examine the role of expectational errors in explaining the superior returns to value stocks in the context of stocks listed on the Irish Stock Exchange. To do this we examine the market's reaction to the release of firms' interim and preliminary results to assess whether investors make systematic errors in pricing. Specifically we test whether the market's response in the period surrounding the release of firms' financial results in the two years after portfolio formation is positive for value stocks relative to the market reaction to growth stocks. This method is similar to the approach adopted by La Porta, Lakonishok, Shleifer and Vishny (1997).[2]

We find that value stocks do indeed outperform growth stocks in the two-year period following portfolio formation. However, in contrast to extant US-research, we are unable to reject the possibility that the return differentials are driven by fundamental risk factors rather than by investors' tendencies to extrapolate earnings growth rates too far into the future.

The remainder of this paper proceeds as follows: In the next section we describe our methodology and in the following section we present our results. We then explore whether our results are perhaps driven by differentials in expected returns as compensation for systematic risk. In the final section we summarise and conclude.

Methodology

Our sample consists of all stocks quoted on the Irish Stock Exchange over the period 1996 to 2002. In order to mitigate potential problems arising from market liquidity we restrict our sample to the top 40 stocks by market capitalisation in each year. [3]

To examine return differences surrounding the release date of firms' interim and preliminary results between value and growth stocks we form portfolios based on two classification systems, the market-to-book ratio (MB) and a classification based on the price-to-earnings ratio (PE). Portfolios are formed in June of each year t using accounting data from year t-1 and market value of equity from December of year t-1.

Using MB we divide stocks into quartiles. The value portfolio consists of all stocks in the lowest quartile of market-to-book and the growth stock portfolio consists of the stocks in the highest quartile of market-to-book. A similar approach is adopted for portfolio strategies based on PE. The value stock portfolio consists of all stocks in the lowest quartile of price-to-earnings and the growth stock portfolio consists of all the stocks in the highest quartile of price-to-earnings.

The focus of our approach is on the market's response to firms' interim and preliminary results. These are measured over the three-day window around the announcement dates reported in the *Irish Stock Market Annual*.[4]

Market Reaction around Financial Results Release Dates for Value and Growth Portfolios

Table 7.1 reports on the market's reaction to the accounting releases of value and growth stock portfolios over the two years after portfolio formation where value and growth portfolios are formed on the basis of MB. The portfolio announcement returns reported in Table 7.1 are equally weighted buy-and-hold returns measured over the three-day window (t-1, t+1) around the publication date of the interim and preliminary results. The reported results are the aggregate of the market's response to the interim and preliminary results for each stock in each of the two post-formation years.

Table 7.1: Returns in the 3-Day Period Surrounding the Release of Firms' Accounting Results on Value and Growth Portfolios Classified by Market-to-Book, 1997–2002

At the end of each June between 1997 and 2002 the top 40 stocks by market capitalisation are ranked in ascending order based on the ratio of market-to-book. The portfolio of growth stocks consists of quartile of stocks with the highest market-to-book value and the portfolio of value stocks consists of the quartile of stocks with the lowest market-to-book. The returns presented in the table are averages over all formation periods. These are measured on a semi-annual basis over the 3-day period (t-1, t+1) surrounding the release of the preliminary (P) and interim (I) results and then summed up over the preliminary and interim results in each of the two post-formation years (P1,I1 and P2,I2).

MB	Growth	Value	Mean difference	t-Stat for Mean difference
P1,I1	0.00165	0.01999	0.01834	4.48*
P2,I2	-0.00506	0.01807	0.02313	5.22*

* = statistically significant at a= 0.05

We find event returns are significantly higher for the value portfolio than for the growth portfolio. In year one, the cumulative event return for the value portfolio is 0.2 per cent for the growth portfolio and 2.0 per cent for the value portfolio. The return differential of 1.8 per cent between the value and growth portfolios is statistically significant at a=0.05. Similar results occur in year two. The cumulative event return for the value portfolio is -0.5 per cent for the growth portfolio and 1.8 per cent for the value portfolio. Again the return differential of 2.3 per cent is statistically significant at a=0.05. This evidence is consistent with the updating of the earnings prospects for value stocks relative to growth stocks taking place slowly.

Table 7.2 presents comparative results based on PE as the method of classifying stocks into value and growth portfolios.

Table 7.2: Returns in the 3-Day Period Surrounding the Release of Firms' Accounting Results on Value and Growth Portfolios Classified by Price-to-Earnings, 1997–2002

At the end of each June between 1997 and 2002 the top 40 stocks by market capitalisation are ranked in ascending order based on the ratio of price-to-earnings. The portfolio of growth stocks consists of the quartile of stocks with the highest price-to-earnings and the portfolio of value stocks consists of the quartile of stocks with the lowest price-to-earnings. The returns presented in the table are averages over all formation periods. These are measured on a semi-annual basis over the 3-day period (t-1, t+1) surrounding the release of the preliminary (P) and interim (I) results and then summed up over the preliminary and interim results in each of the two post-formation years (P1,I1 and P2,I2).

PE	Growth	Value	Mean difference	t-Stat for Mean difference
P1,I1	0.00007	0.01033	0.01026	2.67**
P2,I2	-0.00527	0.00664	0.01191	2.36**

** = statistically significant at a= 0.05

Similar conclusions to those based on Table 7.1 can be drawn. In year one, the cumulative event return in the three-day period surrounding the release of the results is 0.0 per cent for the portfolio of growth stocks and 1.0 per cent for the value portfolio. The return differential of 1.0 per cent between the value and growth portfolios is statistically significant at a=0.05. In year two the cumulative event return for the value portfolio is -0.5 per cent for the growth portfolio and 0.7 per cent for the value portfolio. Again the return differential of 1.2 per cent is statistically significant at a=0.05.

In aggregate the evidence suggests that value stocks significantly outperform growth stocks in the three-day period surrounding the release of firms' interim and final results. The results are broadly similar whether we condition on either MB or PE. Interestingly, the differential returns and their associated t-statistics are of greater magnitude in forming portfolios based on MB, the classification system favoured by Fama and French (1992).

Our evidence on the market's differential response to the accounting releases of value and growth stock portfolios is consistent with the US evidence reported in La Porta, Lakonishok, Shleifer and Vishny (1997).

Are Return Differentials Driven by Differences in Risk Premia?

In the foregoing section we presented evidence that value stocks exhibit positive surprises *vis-à-vis* those experienced by growth stocks in the three-day period surrounding the release of firms' interim and preliminary results for the two-year period following initial portfolio formation. We suggested such evidence is potentially consistent with the behavioural view that investors systematically underestimate the growth prospects of value stocks and overestimate the growth prospects of growth stocks. In other words they extrapolate the positive (negative) growth potential for growth (value) stocks too far into the future. These prospects are re-evaluated slowly as new information comes to the market (for example through firms' statutory accounting releases) and prices begin to mean revert.

However, an ardent follower of the efficient market hypothesis would argue that these returns differentials are not driven by pockets of market inefficiency but rather are attributable to compensation for risk.

We adopt an approach employed in La Porta, Lakonishok, Shleifer and Vishny (1997) to test this possibility. Essentially the market efficiency argument is that differences in returns between value and growth portfolios may be driven by differences in *ex ante* risk premia around a small number of important information events. The argument goes that if a disproportionately high proportion of the annual uncertainty about a stock occurs around the time of the announcement of a firm's results then so also arguably should a disproportionate share of the risk premium as well. This in turn implies that for both value and growth stocks event returns should be higher than non-event returns in these periods.

In contrast if the behavioural view is correct and the information revealed about growth stocks is sufficiently negative, event returns should be significantly lower than non-event returns, despite a higher *ex ante* risk premium. Thus a comparison of event returns and non-event returns for growth stocks can potentially distinguish between the risk premia and behavioural views.[5]

Table 7.3 presents the results for this test using both PE and MB methods of portfolio classification.

Table 7.3: Cross-Sectional Regression Tests of Difference between Event and Non-Event Period Returns for Value and Growth Portfolios

We run cross sectional regression tests of the daily return for each portfolio on the ISEQ index and a dummy variable for whether the day lies in the (-1,+1) interval surrounding the interim and preliminary results. Separate regressions are performed for value and growth portfolios with portfolios formed at the end of each June. In panel A, portfolio formation is based on MB whilst in panel B portfolios are constructed on the basis of PE. As in Table 7.1 and 7.2 the portfolio of growth stocks consists of the quartile of stocks with the highest MB (PE) and the value stock portfolio consists of the quartile of stocks with the lowest MB (PE).

Panel A: MB Regressions	Intercept	Event day dummy	Market return
High MB portfolio return (growth)	0.00019	0.00969	0.31678
	(0.67)	(4.94)**	(12.98)**
Low MB portfolio return (value)	0.00041	0.00710	0.17013
	(1.46)	(3.65)**	(6.92)**
Panel B: PE Regressions			
High PE portfolio return (growth)	0.00008	0.00847	0.46846
	(0.29)	(4.54)**	(19.12)**
Low PE portfolio return (value)	0.00037	0.00963	0.09074
	(0.94)	(3.40)**	(2.68)**

** = statistically significant at a= 0.05

We run cross-sectional regression models of the daily return for each stock on the ISEQ index and a dummy variable for whether the day is in the (-1, +1) window around the announcement of a firm's interim and preliminary results. Regressions are run separately for value and growth stock portfolios.

Taking the results based on the MB reported in Panel A we find for regressions based on high MB (growth stocks) the intercept is 1.9 basis points (bp) per day and a coefficient of 0.32 on the market return. Importantly, the coefficient on the event dummy is a positive 10bp per day. Event days are significantly above non-event days which is consistent with the *ex ante* risk premium argument. Results based on the P/E classification (Panel B) are similar. We find for regressions based on high PE (growth stocks) the intercept is 0.8 bp per day and a coefficient of 0.47 on the market return. The coefficient on the event dummy is 8 bp per day. Thus, for both the MB and PE methods of classifying growth portfolios, event-day returns are significantly above non-event day returns which is consistent with the *ex ante* risk premium argument and not with the behavioural perspective.

For (low MB) value stocks the intercept is 4.1 bp per day and a coefficient of 0.17 on the market return. The coefficient on the event dummy is 7 bp per day. For (low PE) value stocks the intercept is 3.71 bp per day and there is a coefficient of 0.09 on the market return. The coefficient on the event dummy is 10 bp per day.

In summary therefore, based on comparisons of event- and non-event-day returns for growth stocks, we are unable to reject the possibility that the differentials in realised returns between growth and value stocks are in fact driven by differences in *ex ante* risk premia rather than by expectational errors by investors underestimating the growth prospects for value stocks and overestimating the growth prospects for growth stocks. The risk premia hypothesis implies that event day returns should be higher than non-event returns for both value and growth stocks. The data is consistent with this hypothesis. We do not find that event returns for growth stocks are lower than non-event returns for growth stocks which as previously articulated would be consistent with the behavioural hypothesis.

Interestingly, our results in this regard contrast with those of La Porta, Lakonishok, Shleifer and Vishny (1997). They report results that do not support the risk premium argument. Specifically, their data show that event returns are lower than non-event returns for growth stocks despite the higher *ex ante* risk premium posited by the market efficiency theory which they conclude is consistent with the behavioural perspective.

Summary and Conclusion

In this paper we examined whether expectational errors play a significant role in explaining the return differentials to value and growth stocks on the Irish Stock Exchange in the period surrounding the release of firms' interim and preliminary results. Our sample consists of the top 40 companies by market capitalisation each year over the period 1997–2002.

Our initial results suggest that the market's response to the release of firms' financial results is of larger magnitude for portfolios of value stocks than for growth stock portfolios. However, in further analysis, we are unable to reject the possibility that these return differentials are driven by compensation for risk rather than by systematic expectational errors made by investors.

One possible interpretation of our results is that by restricting our sample to the top 40 companies by market capitalisation, the pricing of such firms is more efficient, leaving less room for systematic bias in the earnings surprises for value versus growth stocks. There is evidence in the literature that large firms are less likely to be subject to anomalous behaviour than "smaller" firms (e.g. Hong, Lim and Stein, 2000; Hong and Stein, 1999; Merton, 1987). Interestingly, La Porta, Lakonishok, Shleifer and Vishny (1997) report weaker evidence of value stocks outperforming growth stocks in the period surrounding the release of firms' quarterly results when they refine their sample companies to include only those that have a market capitalisation in excess of the NYSE median.

However, if we were to expand our sample companies to include the remaining 40 or so companies quoted on the Irish Stock Exchange we would run into problems of illiquidity. In addition the market value of those remaining companies constitutes less than 5 per cent of the total value of the entire market. Thus, from an investor perspective, any potential profitability, even if it were to exist, would not be economic to exploit.

Our reported results have implications for investors implementing value versus growth trading strategies for the largest most liquid stocks quoted on the Irish Stock Exchange. Though value stocks systematically outperform growth stocks in the period immediately surrounding the release of firms' financial results, the profitability of such strategies may be potentially illusory as the differences in return may simply be appropriate compensation for risk rather than reflective of investor expectational errors in pricing stocks.

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1 Broadly speaking value stocks are defined as stocks that have a low market price relative to financial variables such as earnings, book value of assets, cashflow, dividends etc. Growth stocks are correspondingly defined as those having a high market value relative to these variables.

2 As firms' results are released on a quarterly basis in the US, La Porta et al. (1997) examine the differential price reaction to value versus growth stocks in the immediate vicinity of these dates.

3 Thin trading is a particular problem on the Irish Stock Exchange (Murray, 1995). Though restricting our sample stocks to the top 40 by market capitalisation is to a certain extent arbitrary a cursory examination of share price activity reveals that for companies marginally below the top 50 there is a considerable number of days when the share price does not change. For example, taking the two-year period 1999–2000, for those companies outside the top 50 the average proportion of days for which there is no price change is 71% of cases (standard deviation = 17.5%; median = 68%). This is prima facie evidence of lack of trading activity. In any case, the total market value of the companies excluded from our sample represents less than 5% of the value of the entire Irish Stock Exchange and therefore as a group they are not economically significant and would be of little interest to investors attempting to exploit profits using value-based trading strategies.

4 We aggregate returns until one day after the announcement date to account for the possibility of delayed stock price reaction. This measure is a very clear measure of market surprise, since it does not require an explicit model for investor expectations. Accumulating the return from the day prior to the announcement date is designed to take account of prior information leakage and information search by market participants in the day prior to the known release date (Kim and Verrecchia, 1991).

5 It would not be possible to disentangle these two views for a portfolio of value stocks because for both the behavioural and risk premia explanations one would expect a higher return on event days than on non-event days.

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Government Activism and Industry Change: The Structural Evolution of Irish Wholesaling

JIM QUINN* AND BRIAN LEAVY**

Introduction

Empirical studies of the structural evolution of whole industries are still quite rare in the economics literature, and rarer still beyond that discipline (Malerba and Orsenigo, 1996; Malerba et al., 1999). Within mainstream economics, industries are assumed to evolve quickly towards their most efficient or lowest cost configurations. Rarely is much interest taken in how industry structure changes from one configuration to another or how such transitions might be stimulated by factors other than technological breakthrough (Christensen, 1997; Tushman and Anderson, 1986). This strong focus on technology remains and is evident in the preface to a recent special issue of *Industrial and Corporate Change* on industrial dynamics (see Dosi and Malerba, 2002).

This paper is drawn from a recent study of the evolution of three Irish wholesaling industries: grocery, builders' merchanting and hardware. The research strategy was multi-level, multi-modal and longitudinal, using a comparative case-based methodology, and was akin in method and perspective to the contextualist approach developed for the Warwick studies on corporate change (Pettigrew, 1990, 1997). This is further elaborated in Appendix 8.1.

The full study tracked the structural evolution of wholesaling in the three sectors over most of their histories, particularly since Irish independence in 1922. It set out to examine two fundamental questions: what are the main explanatory drivers of industry evolution and what are the main patterns of process? While a number of empirical drivers were observed to be significant over time, the central role played by government and its agencies, is the primary concern of this paper. Among the most striking findings were that all three sectors experienced their most radical phases of structural change over the 1948 to 1963 period and that the primary stimulus for change came from government activism, not technology.

* *School of Business Studies, Trinity College Dublin*
** *Business School, Dublin City University*

A common pattern in all three sectors was the rise to prominence of trade associations during the protectionist era and the rupture of their influence following the change in public policy to trade liberalisation in the 1950s. Within each sector this transition led to major change in channel power, trading formats and industry leadership. At national level, the key date in this transition is normally associated with the appearance of Ken Whitaker's landmark *Economic Development* in 1958. However, what this study shows is that for much of the wholesaling sector the watershed came earlier with the establishment of the Fair Trade Commission (FTC) by the government of the day in 1953.

This paper will now set out to examine in some detail these major change episodes in the histories of two of the industries studied: grocery and builders' merchants. Such an examination is of value for three reasons. To begin with, it is one of the first empirical studies of the dynamics of change within Irish wholesaling. In addition, it provides rare insight into the relationship between public policy and industry change over a pivotal period in modern Irish economic development. Finally, and more generally, it informs the debate between the gradualist and punctuated perspectives that continues to energise the change literature, extending empirical support for the punctuated model to industry level and highlighting the importance of factors other than technology as catalysts for major change.

The remainder of the paper begins with a brief overview of the genesis of the FTC in national historical context. It then goes on to review the process of industry structural change in each of the two cases and the pivotal role of the FTC in this process. The article concludes with some implications for future research and practice.

Historical Context and the Genesis of the Fair Trade Commission

Following independence in 1922, the Irish Free State came into being "virtually without a manufacturing sector" (Ó'Gráda 1997: 108) as a result of a "long trend away from manufacturing into the import and distribution of British goods" (Farmar 1996: 52). In terms of economic policy, the Cosgrave government made a "virtue of continuity and caution" (Ó'Gráda 1997: 4) and to a great extent followed a laissez-faire approach to trade (Lee, 1989). This all changed when the first Fianna Fáil administration came to power in 1932, "ideologically committed to as much self sufficiency as possible" (Lee, 1989: 184). This policy was mostly pursued through the selective use of tariffs and duties on imports of finished goods to provide incentive for domestic assembly. For the sectors under study, it had a significant impact on the dynamics of channel power and gave major impetus to the rise of trade associations.

Protectionism and the Rise of Trade Associations

Between 1931 and 1937 the number of items subject to import controls rose more than twenty-fold from just under 100 to almost 2,000. The first Fianna

Fáil government also introduced the Control of Manufacturers Act (1932) to mandate majority Irish ownership with few exceptions. In response, many British firms looked to form alliances with native businesses to shield their Irish sales from the effects of tariffs. In practice, the new economic policy also resulted in "positive discrimination in favour of Catholic firms", as import substitution favoured newly established Catholic manufacturing businesses at the expense of traditional Protestant importers and wholesalers (Farmar, 1996: 89).

Overall, the initial effects of protectionism were dramatic, with industrial output rising by 40 per cent during the five years to 1936. This was overshadowed by a decline in performance of older exporting industries and the loss of many jobs in traditional distributive sectors that were dependent on imports for survival. The onset of the Second World War then saw the Irish economy become virtually closed off from overseas markets (Ó'Gráda, 1997: 18).

After the war the economy experienced a period of short-lived, consumer-led, growth. However, the boom masked underlying problems. As Houghton (1995: 34) noted, by the 1950s "much of the industrial sector could only survive because of protection, it was too inefficient to export successfully, although it was certainly strong enough to lobby against any liberalisation". As the number of local entrepreneurs grew, so did their economic influence. A particular feature of the period was the explosive growth in trade associations and employer organisations of one type or another. Between 1931 and 1950, the number of such organisations grew fifteen-fold, from 10 to around 150. In practice, many of them turned out to be "little more than cartels" (O'Hearn, 1990: 12).

The Establishment of the Fair Trade Commission

By the late 1940s, the Minister for Industry and Commerce, Sean Lemass, was already losing confidence in the capacity of native enterprise to serve the national interest "except under compulsion" (Lee, 1985: 291). In 1947, he introduced the Control of Prices and Promotion of Industrial Efficiency Bill, aimed at tackling excessive profits and restrictive practices. Faced with strong opposition from the Department of Finance and the business community, the Bill was substantially altered before lapsing with the dissolution of the Dail in 1948.

However, on his return to power in the early 1950s, Lemass introduced the Restrictive Practices Act (1953), which set up the Fair Trade Commission (FTC) and gave it sweeping powers to investigate any industry or trade. In addition, the new legislation gave the Minister power to issue binding orders on the advice of the Commission. In its first report, the FTC found the general attitude of trade associations to price competition to be "disturbing". Throughout the rest of the decade, the Commission's activities emasculated many of these associations and in the process stimulated radical structural change in a range of Irish industries, including those of grocery wholesaling and builders' merchanting.

Case 1: Structural Change in the Grocery Wholesaling Industry

In the 1930s, a substantial proportion of the national wholesale grocery market was controlled by a small group of firms. Among the most prominent were the Dublin-based firms of Hugh, Moore & Alexander, and Shirley, Spence & Bedford, both part of "a business establishment and philosophy which tended to think the grocery business was theirs as of royal decree". In Cork, the major players were Newsoms, Punch & Co., Ogilvie & Moore and Musgraves. This period also saw some notable new entrants, including D. Tyndall & Sons and Mangan Bros. Ltd.

The decade proved difficult, with duties and levies affecting the importation of several grocery products. Protectionism also brought an insularity that undermined competitiveness and allowed some in the sector to extract excessive profits. Manufacturing trade associations began to emerge and press for lower margins within the distribution channel. In response, the twenty-five largest wholesalers formed themselves into the Association of Wholesale Grocers, Importers and Distributors (AWGID) in 1937. Two years later, seventy-five of the smaller firms set themselves up as the Wholesale Grocers Association of Ireland (WGAI).

From the beginning, both wholesaler associations used their collective power to press for better terms from manufacturers, stabilise prices and discipline any individual members acting "in a manner detrimental to the interests of the association", particularly those seeking to trade as both wholesalers and retailers. The Second World War brought shortages and rationing to the grocery sector. Price controls were enforced and a system of registration was introduced to control access to key commodities. These measures strengthened the position of the wholesalers, as they became the mechanism for implementing the controls. However, the period also saw a growing sense of grievance amongst retailers, which found expression through the formation of the Retail, Grocery, Dairy and Allied Trades' Association (RGDATA) in 1942.

After the war food shortages continued for some years and many wartime price controls remained in place. However, tensions began to build in grocery wholesaling. Government increasingly believed that food distribution was grossly inefficient and used controls extensively to limit margins. In spite of this, however, price inflation continued during the early 1950s, with food prices rising by 10 points in 1951 alone.

Between 1951 and 1952, the government's Price Advisory Body held a number of inquiries into grocery prices and margins. The ensuing publicity was damaging for wholesaling, leading J.E. Lalor, then president of WGAI, to complain that "due to factors beyond our control, our position as wholesale distributors has been assailed by misinformation and irresponsible criticism". When the FTC was established in 1953, the grocery sector was among the first to come under its scrutiny.

By the early 1950s price controls and outdated work practices made many of the older wholesalers inefficient and vulnerable to aggressive competition. The period was marked by increasing channel tensions as wholesalers sought to protect their margins against erosion in the face of new trading formats, particularly cut-price retailing in the large urban centres and mixed trading in the provinces. Cut-price retailers began to form their own co-operative wholesaling groups to help secure supplies at keener margins, while many mixed traders sought access to "wholesale" terms from the manufacturing sector. One example of the thrust and counter-thrust characteristic of the period was the unilateral attempt by confectionary manufacturers in 1952 to rationalise distributor discount structures, which distributors successfully fended off on point of principle. As David Tyndall the then president of WGAI recalled, "if this ill-conceived action had been allowed to pass unchallenged", the wholesale grocery trade would have suffered "penal reductions" in their "already meagre profit margins". However, rising tensions within the wholesaling sector over the mixed-trading format led to the collapse of the WGAI in 1955 and further consolidation of the trade, as the more prominent members of WGAI joined with the industry leaders in the AWGID to form the more concerted Irish Wholesale Grocers Association (IWGA).

In May 1955, the FTC launched a public inquiry into the supply and distribution of grocery goods and provisions in response to the continued attempts to control prices and margins and hinder new forms of competition. In June 1956, it recommended that resale price maintenance should be abolished and the collective fixing of prices and discounts be legally prohibited. Prices were to be based on purchase volume rather than function, extending "wholesale prices" to large retailers and co-ops. Furthermore, the FTC could see no reason why the integration of wholesale and retail activities should be prohibited, nor why further entry should be limited, thus opening up the sector to co-operative formats.

Following the FTC draft report, the IWGA submitted a memorandum to the Minister suggesting amendments to the proposed Order. Throughout 1956 and 1957 the Association fought hard to convince the FTC to retain retail price maintenance, resist attempts by manufacturers to reduce discounts, block the retailers' co-ops and multiples from getting full wholesale terms and pressurise manufacturers not to supply cut-price retailers directly. By then, however, it was an agenda that was clearly running against the tide of public policy. The wholesalers soon came to realise that new methods of trading could not be successfully countered by negative action and that the climate of government, manufacturing trade and public opinion was now firmly on the side of change.

The FTC recommendations precipitated a period of widespread uncertainty, during which some manufacturers reduced channel discounts and created new discount structures for multiples and retailer co-ops. A defining moment came when the IWGA acceded to demands from the Jam Manufacturers and Canners' Association for lower discounts. As the IWGA's then chairman, Reggie Knight, observed at the time, the climate of uncertainty had "permitted the development of forces in the grocery trade which … [acted] … to make it extremely difficult to re-instate the system of maintained prices as an effective protection of the interests of the members." When the Restrictive Trade Practices (Groceries) Amendment Order 1958 turned the FTC's recommendations into law, resale price maintenance was abolished and co-ops and large retailers gained access to best manufacturer prices. In the wake of the Order's enactment, IWGA Secretary Kevin Clear openly recognised that the writing was on the wall for the old order when he warned his Executive that it was no longer realistic to "plan and think in terms of the maintained price system" and advised that they "prepare themselves for an era of keen and unrestricted price competition".

Over the following decade, the structure of the sector changed beyond recognition. The early 1960s brought the demise of the old establishment as long-time leading incumbents like Hugh Moore & Alexander and Shirley Spence & Belford failed to adapt and ceased to trade, and recidivists of the period, like Reggie Knight, long the industry's most influential figure, faded from the scene. Progressives, like David Tyndall of SPAR (later BWG Foods) and Hugh Mackeown of Musgrave's came to prominence as the industry reconfigured around new commercial formats, most notably cash and carry and symbol group trading. Industry leadership passed to players in the van of these innovations, particularly to those that realigned themselves under the Musgraves-VG (later Supervalu and Centra) and SPAR banners. The new order that emerged from this turbulent period in the industry's history has remained remarkably stable over several decades.

Case 2: Structural Change in the Builders' Merchanting Industry

The historical pattern of industry change just described, and the pivotal role played by the FTC in that pattern, was not unique to the grocery sector. It was also to be found in other sectors, including builders' merchanting, as we shall now see.

At the beginning of the 1930s most of the building materials used in Ireland were of British origin and distributed through local merchants. By then, the industry had developed a two-tier structure, dominated by a small number of "A" merchants, or primary importers, that then sold on to smaller "B" merchants and general traders. The leading "A" merchants were the three Dublin-based firms of Brooks Thomas Ltd., Thomas Dockrell Ltd and T. & C. Martin Ltd. British manufacturers typically fixed resale prices and enforced their maintenance by withholding supplies and other methods.

The advent of protectionism brought change to the industry. The new policy of self-sufficiency encouraged import substitution and was so successful in this regard that by the early 1950s, the bulk of building materials were made in Ireland. This expansion in local manufacturing affected the distribution sector. The Cement Act (1936), for example, gave a local monopoly to Cement Ltd and ended imports of the commodity. Many of the new indigenous manufacturers did not prescribe resale prices, so "associations of merchants themselves undertook the fixation of margins and sought the co-operation of the home manufacturers in ensuring compliance with them". The early 1930s saw the formation of an association, later known as the Irish Builders Providers' Association (IBPA), to represent merchanting interests. Membership was confined to those with a minimum of 75 per cent wholesale business with builders, plumbing contractors and other relevant trades. New trading standards were introduced to establish clear lines between "legitimate" merchants and the hundreds of provincial hardware and general providers trading in building materials. The new association negotiated prices with manufacturers and administered a national price list.

As the 1930s progressed, the leading merchants, through their association, developed exclusive relationships with indigenous manufacturers and gained control over the supply of key building materials. Dissatisfaction with the growing inequality in distribution prompted the formation of the Hardware and Allied Traders Association (HATA) in 1938 to represent the interests of the smaller urban and provincial merchants. With the outbreak of war in 1939, commercial activity was increasingly disrupted by shortages, but the leading merchants suffered only small reductions in their pre-war levels of profitability.

In early 1944, the government produced plans for post-war building projects valued at £68m. This, together with the release of pent-up demand, saw the number of builders' merchants grow from 54 to 109. It also spurred the "A" merchants in IBPA to consolidate their control over the industry, to the growing concern of others in the trade. Beginning in 1949, HATA, through its own trade journal, Hardware and Allied Trader, mounted a sustained campaign against the restrictive practices of the "A" merchants. By the early 1950s, it had already become a political issue, as evidenced in a 1952 parliamentary exchange between James Dillon and Sean Lemass over the refusal of Irish Founderies Ltd to supply a small merchant not in the IBPA. Shortly after its establishment, the FTC announced an inquiry into the supply of building materials.

The FTC inquiry provoked an early reaction when it singled out the IBPA and its affiliates for special attention. The leading figures in the association at the time included Herbert Garner of Baxendales, its chairman, along with George S. Gamble of Brooks Thomas, Henry Morgan Dockrell and two directors of T. & C. Martin. It is clear from the evidence given that controlling trade was seen to be a legitimate practice by those involved. The chairman of one of the affiliates defended the actions of his association by explaining that they stemmed from "the fact that quite a number of people invaded this trade who were not in it before" and that "the older established houses just said – 'Well, we are not going to let them in'".

The FTC recommended that the Minister prohibit the restrictive practices and price collusion identified in its investigation and the Restrictive Trade Practices (Building Materials) Order 1955 was issued which banned price-fixing, approved lists, resale price maintenance, interference with suppliers' choice of channels and the withholding of supplies unfairly. The work of the commission also served to reduce barriers to entry and increase price competition. As a consequence, the 1957 census of distribution records the number of merchanting outlets having risen from 109 to 186. In time the FTC actions would be seen to have precipitated changes that radically altered the industry.

The changes were quick to take hold. In a review of the Order conducted in 1959 its effects were widely welcomed by manufacturers and builders, but not by the majority of builders' merchants and their associations. For them, competition had reduced prices to uneconomical levels. Competition in timber and cement became particularly severe. Former customers such as public authorities, manufacturers of concrete products and builders were now sourcing directly, co-operatives and small merchants were engaging in collective buying and many new entrants were selling cement at very keen prices in order to secure volume discounts.

The stimulation of the building sector by a new housing bill and the national programmes for economic development did little to ease the pressures mounting on traditional merchants in the wake of the FTC investigation. By 1961, two of them, J. J. O'Hara, a large Dublin merchant, and W. & L. Crowe, a major timber importer, had already been forced to exit the business. By the early 1970s both Baxendales and T. & C. Martin had also passed into history, while the fates of both Dockrells and Brooks Thomas had fallen into the hands of then newly emergent conglomerates, BWG and Fitzwilton. Even then, they were on their way to further decline. By the early 1980s Dockrells had closed and Brooks went out of Irish ownership, sold on to a Scandinavian timber supplier.

Once again, as in the case of the grocery sector, industry leadership passed on to a new order, as the firms of Heitons and Chadwicks rose to prominence on the back of innovative strategies and organisation, and the entrepreneurial talents of Richard Hewat and Finton Chadwick respectively. Both companies anticipated the collapse of the old "A" and "B" regime in the wake of the FTC investigation and accelerated its demise by introducing the multiple outlet innovation to the sector through the progressive development of nation-wide chains. Again, as in the case of the grocery sector, the new order that emerged from this most turbulent period in the sector's history has remained remarkably stable to the present time.

Implications and Conclusions

This brief examination of the effect of the FTC on the structural evolution of the Irish grocery and builders' merchanting wholesale sectors is of interest in several respects, empirically, historically and analytically.

At the descriptive level, it is of interest because there have been so few empirical studies of industry evolution carried out to date and direct knowledge of the process dynamics remains quite scant and underdeveloped. As Malerba and Orsenigo (1996: 66) point out, not only does the research to date "provide few case studies of the structural evolution of industries", but even where it does it is mainly as a by-product and not as the primary research objective. This present study goes some way towards addressing this lacuna. Moreover, such few studies as do exist have tended to focus on manufacturing industry. As Fein (1998: 232) notes, "there has been little research into evolutionary processes in distribution", and this study is one of the first of its kind in an Irish context.

For Irish economic historians, the study also offers valuable insight into how the major policy changes at national level over the period from the early 1930s to the late 1950s were reflected in developments within particular sectors. In this respect, at least three points are noteworthy. The first is how the early 1930s shift in national policy to economic self-sufficiency led to the rapid rise in trade association activity across the board, as channel politics began to take precedence over economic efficiency. The second is how this process was seen to more or less reverse itself as protectionism was discarded during the 1950s. Most strikingly, the data also highlight the significance of the 1953 FTC in the national turnaround and renewal process of the 1950s. Dr Ken Whitaker, architect and author of *Economic Development* (1958), the landmark blueprint associated with the recovery effort, was among those interviewed for this study. Characteristically, he was quick to acknowledge the importance of antecedents, such as the FTC, that rarely receive the credit due. Again, this study goes some way to redress this shortcoming.

At the analytical level, the study provides at least two features of interest to researchers and practitioners involved with industry evolution. Firstly, it provides further empirical support for a punctuated perspective on structural change, but grounded in a sector that, so far, has been little researched. It also highlights the role played by government activism as a trigger for industry structural change.

Up to now the study of industry structure has remained primarily the province of economists, where the tendency has been to study industries at equilibrium. In this tradition, industries are taken to gravitate rapidly towards their most efficient configurations, so that interest in what these configurations are, and how they might vary across different industry contexts, has taken precedence over how they change with time. This primacy of interest in structure over process is reflected in the structure-conduct-performance (SCP) perspective in the Industrial Organisation tradition (Bain, 1968) and in the transaction cost economics (TCE) perspective that is still dominant in organisational economics (Williamson, 1975, 1995).

Elsewhere in the social sciences, researchers have concerned themselves for some time with the process of structural change, but mostly internal to the firm. At organisational level, one of the major debates in the change literature concerns the longer run pattern of change and whether it is gradual or punctuated.

On the one side of this debate, much of the traditional organisational development literature, from the late 1960s onwards, has tended to present "an ideology of gradualism", as Dunphy and Stace (1988: 317) have pointed out. The gradualist perspective is also strongly reflected in James Brian Quinn's (1980) theory of logical incrementalism. While Quinn does not exclude the possibility of revolutionary change, it is not his central concern. Implicit in his perspective is that all but the most catastrophic events can be coped with relatively smoothly through a well-conceived gradualist approach. His model is based on two underlying assumptions. The first is that organisations are very adaptable. The second is that adaptation can be purposefully managed, if an organisation's leaders follow the right model. Quinn's twenty-year old perspective remains one of the most influential at the organisational level and his conceptualisation of strategic change as an emergent process of purposeful experimentation and learning has been reflected in much subsequent work (Collins and Porras, 1996; de Geus, 1988; Mintzberg, 1987; Senge, 1990; Waterman, 1994).

However, as a model of change at the organisational level, the gradualist perspective is far from universally shared. Over the last two decades, many have been drawn to a more punctuated perspective in which the process of major change is characterised by long periods of evolutionary change interspersed with shorter, sharper bursts of revolutionary or disruptive transformation (Foster and Kaplan, 2001; Gersick, 1991; Greiner, 1972; Johnson, 1990; Miller and Friesen, 1980; Pettigrew, 1985; Tushman and O'Reilly, 1996). Underlying this more punctuated perspective on change is the recognition that there are many forces in organisations – psychological, historical, structural, cultural and institutional – that tend to resist the pressure for change until it becomes almost overwhelming. This more punctuated perspective questions the two key assumptions underlying the gradualist view, i.e. the adaptability of organisations and the degree of influence that any incumbent leadership tends to have over the change process. As Miller and Friesen (1980: 591) have argued, the "one theme that stands out in the literature is that organisations tend to demonstrate great sluggishness in adapting".

Within the punctuated perspective at organisational level, one of the most robust portrayals of the dynamics of process is the classic unfreeze-change-refreeze model, first developed by Kurt Lewin (1951), and most of the more recent frameworks are variations on the original (Antonioni, 1994; Johnson, 1990; Leavy, 1997; Miller, 1982; Pettigrew, 1985). As Nonaka (1988: 57) succinctly characterised it, the process of organisational transformation can best be seen as a "process of dissolving an existing order and creating a new one". What this present study shows is how the punctuated perspective and this model of process also extend to structural change at the sector level.

The overall interpretation of process common to most of these firm-level models can be summarised as follows. Structural change happens mainly in disruptive shifts from one structural configuration to another, rather than through continuous renewal and adaptation. The main elements that bring stability to any new configuration are shared ideology or mindset, political balance and cultural traditions, and as time progresses the growing alignment among all three. The result is that every such order eventually becomes over-adapted to the conditions of its early development and increasingly out of kilter with emerging realities. The ever-growing tensions between the congealed order and the new realities are held to breaking point until, finally, something triggers a rupture.

The relevance of such an interpretation of structural change to the cases under study here is not too hard to find. Following the change in national policy to economic self-sufficiency in the early 1930s both sectors gradually became over-adapted to protectionism, ideologically, politically and culturally. This was most manifest in the rapid rise of trade association, which became a major force for stability in each of the sectors studied. Equally striking and consistent with this interpretation were the lengths to which these associations were seen to go in trying to preserve the old order in the face of increasing pressure for change and the cost that many of the industry leaders later came to pay for such conservatism.

In sum, this brief analysis shows the relevance and utility of a punctuated "unfreeze-change-refreeze" process perspective to the interpretation of structural change at the sector level. From a research standpoint, this should be of some interest to those, in the vanguard of reviving the Austrian non-equilibrium tradition in economics, seeking more empirical insight into the dynamics of industry evolution, Schumpeterian or otherwise, and how they play out over time. It should also contribute to the developing view of process within the emerging field of evolutionary economics, where support for the punctuated perspective on industry evolution remains equivocal (Mowery and Nelson, 1999). At a more practical level, greater recognition of the punctuated nature of industry structural change, and further insight into its underlying dynamics as illustrated in studies such as this one, should help those with an interest in how industries evolve to better understand why "rational" industry change tends to take so long, and how to intervene in the process to best effect.

Finally, a key element in any such punctuated perspective is the triggering mechanism. To date, the primary trigger in industry studies is taken to be disruptive technological breakthrough. A classic illustration is the impact of the mini-mill technology on the structural evolution of the steel industry, on the basis that if it can happen in such a traditional industry, it can happen anywhere (Christensen, 1997). What this current study shows is that there are at least some contexts in which technology is not the primary catalyst. In the case of each of the sectors studied here, pride of place belonged to the activities of the FTC, and government activism, not technology, was the primary trigger for industry revolution.

This is a finding of significance to all those with an interest in industry evolution. It is also one that should be of special interest to public policy makers concerned with the development of industry strategy. Beyond this, it indicates that government activism should figure more prominently in conceptual frameworks guiding future empirical studies of industry evolution. More such studies are now urgently needed.

Appendix 8.1
A Note On Research Methodology

This paper draws from a research programme that studied the drivers of industry evolution and the temporal pattern of the associated processes (Quinn, 2002). The study sought to explore how context, social action and history interplay in driving and patterning the process of evolution.

A number of writers (see Gersick, 1991; Meyer et al., 1990; Pettigrew, 1990, 1997; Scott, 2001) have advocated *multi-modal* approaches to studies of change. Furthermore, both Pettigrew (1985, 1987) and Scott (2001) have advocated a *multi-level* approach. Few templates are available to guide inductive research into the dynamics of industry evolution using multi-level, multi-modal approaches. This study adopted a contextualist research strategy of the type developed in the Warwick Studies on Corporate Change and well proven in use (Leavy and Wilson, 1994; Pettigrew, 1985; Pettigrew and Whipp, 1990). In common with most qualitative methodologies, it is not defined by highly specified techniques. Rather, as Pettigrew (1985: 38) has explained, there are a number of "broad principles informing a contextualist analysis of process". Briefly these are:

- Multiple levels of analysis in connecting context, process and outcome using economic, political and cultural modes of analysis
- An underlying theory of social action that is neither over-voluntarist nor over-determinist in world view
- Longitudinal case-based research designs that allow patterns of continuity and change to be observed over time.

A contextualist perspective emphasises the importance of embeddedness (and multi-level analysis), the importance of temporal interconnectedness and history, the search for holistic rather than linear explanations and the role in explanation of both context and action (Pettigrew, 1997). It is a perspective that resonates strongly with the *ensemble des jeux* perspective of Crozier and Friedberg (1980), the structuration theory of Giddens (1985) and Sztompka's theory of social becoming, in its emphasis on the reflexive and recursive nature of the relationship between context and social action, social structure and human agency, where context is seen to both enable and constrain social action, social action is seen to both shape and be shaped by social structure, and these relationships are seen to be dynamic and contingent.

Contextualist analysis encourages the examination of the relationships among the rational and the political, efficiency and power, the enabling and constraining forces of intra-organisational and socio-economic and political context. Theoretically sound and practically useful research on change is seen as involving the continuous interplay of ideas about the context, process and content of change, as well as skill in regulating the relations among the three. In order to achieve this, a multi-level and multi-modal approach is advocated.

In essence, the "driving assumption" behind process thinking in the contextualist approach, is that "social reality is not a steady state" but "a dynamic process" and the "overriding aim" of the process analyst is to "catch this reality in flight" (Pettigrew, 1997: 338). However, within this dynamic perspective, the "dual quality" of the relationship between agency and context is recognised, where contexts are "shaping and shaped" and agencies are "producers and products", and this interaction between agents and contexts "occurs over time and is cumulative" (1997: 338–9).

Case selection was governed by several considerations. The initial interest in the wholesaling sector came from professional experience. However, it was also sparked by prior research (Quinn, 1992) which found that the literature on wholesaling was under-developed and that significant variations were apparent in the structure of Irish wholesaling. Furthermore, there is a distinct shortage of fine-grained longitudinal studies of non-manufacturing industries in the evolutionary literature (Klepper, 1997; Orsenigo and Malerba, 1996; Utterback, 1994). What's more, industry studies on Irish wholesaling may present particular attractions as small country context facilitates multi-level analysis (Leavy and Wilson, 1994). Finally, Pettigrew (1990) advocates a strong contrast in case selection, which was particularly evident in the contrast between grocery and building materials/hardware.

High quality access to respondents and archives was achieved. It was possible to draw on an extensive network of business contacts which ensured that respondents were generous with their time and forthright. Industry associations were particularly helpful in securing interviews with key respondents and accessing valuable archival material. During interview, many industry veterans provided invaluable personal insights, allowing these to be documented before they were lost forever.

The data was gathered between 1997 and 2001. In total, 59 lengthy interviews were held with 44 different individuals. As respondents were asked for accounts of different episodes from a range of perspectives the approach taken to the interview process was one of customised planning. A number of the interviewees were long-retired senior figures, able to provide invaluable first-hand insight into key episodes going back over 50 years. The archival and documentary sources included trade journals, written histories, minutes of trade associations and reports and records of associated public bodies such as the Competition Authority and the Fair Trade Commission, in addition to industry statistics from various census sources. As is typical in this kind of study, data collection and analysis proceeded in tandem, particularly during the latter stage of the project.

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What Are they Doing? A Study of Contemporary Marketing Practice in Ireland

MAIREAD BRADY* AND ROGER PALMER**

Introduction

A study was undertaken in 2001 into contemporary marketing practice in five countries. The findings were published in the *Journal of Marketing* (Coviello et al., 2002). The paper called for other academics to replicate this research in different countries so that a comprehensive and comparative study of worldwide marketing practice could emerge. To this end this paper reports the findings from an Irish study into contemporary marketing practice. The findings demonstrate the continued dominance of transactional marketing, but other marketing practices are also identified. Implications for researchers, teachers and practitioners are discussed.

Literature Review

The literature review briefly considers four main themes which form the backdrop to the area of research known as the Contemporary Marketing Practice (CMP) studies. This stream of research was initiated at the University of Auckland (Brodie et al., 1997) and has since developed into a large, comparative, international study (Brookes and Palmer, 2004). The nature of this research is subsequently discussed in more detail.

Theory and Practice

Marketing has suffered from lack of a clear understanding of what constitutes marketing practice itself and in relation to the theoretical principles. The general thrust of the literature is twofold; marketing is struggling to respond to changes in the marketing environment (O'Driscoll, 1997; Palmer and

* *School of Business Studies, Trinity College Dublin, e-mail: Mairead.Brady@tcd.ie*
** *Cranfield School of Management, Cranfield, UK, e-mail r.a.palmer@cranfield.ac.uk*

Ponsonby, 2002; Piercy, 1998). Various authors provide a range of explanations and directions for these new opportunities for marketing (Brown et al., 1996; Brownlie et al., 1999; Day and Montgomery, 1999; Murray and O'Driscoll, 1996; O'Malley and Patterson, 1998; Wensley, 1995). The ability of marketing theory to respond to the contemporary needs of managerial practice is both questioned and questionable.

New Research Directions

Alternating with these discussions have been calls for more research into marketing practice. That is to say looking at what marketers actually do – the implementation of marketing (Bonoma, 1985; Brownlie and Saren, 1997; Brownlie et al., 1999; Gummesson, 1991; Hunt, 1994; Webster, 1992). What is needed is research focused on real and relevant problems and "what is going on out there" (Brownlie and Saren, 1997; Laurent and Pras, 1999), as marketing research to date has apparently had little impact on the practice of marketing (Saren, 2000). This gulf between academic theory and marketing practice is succinctly summarised by Brownlie and Saren (1995: 1077) who refer to "the high-mindedness of marketing theory and the low deeds of marketing practice". They state that "there is a wealth of material telling us what to do and how it should be done, but rarely how it is done". Baker (2000: 305) concurs and notes that research in marketing should confirm to us that the theory works in practice. In turn, we need to know more about how marketing is practised before we can "presume to prescribe" (Easton, 1998: S85). Theory must be informed by practice and vice versa.

Transactional and Relational Perspectives and Pluralistic Approach

Marketing has its origins in economics based on "concepts such as exchange, profit maximisation, utilities, specializations, the economic man and rationality" (Heeler and Chung, 2000: 63; Reinartz and Kumar, 2003). Relationship marketing in its simplest form is a progression from the dominant and often criticised, traditional, transactional 4Ps focus (Baker, 2000; Day and Montgomery, 1999; Gronroos, 1997; Gummesson, 1987, 1998; Payne, 1995; Peppers et al., 1999; Youngme, 2000). For example, Baker (2000: 303) is critical of the marketing mix or Kotlerian view of marketing, noting that, "The marketing management model is production orientated due to its preoccupation with what marketers 'do' to consumers. Its emphasis is essentially short-term and transactional". Whilst these views are sometimes positioned as mutually exclusive, they may also be regarded as part of the same continuum. The concept of a continuum suggests a move away from the static marketing mix view of marketing practice, though others have reflected a more diverse (Murray et al., 2002) or pluralistic approach. An early CMP study tentatively concluded that "Firms practice more than one if not all types of marketing" (Brodie et al., 1997: 397). Further and more recent empirical studies have shown strong confirmation of the pluralism of approaches within contemporary marketing practice (Coviello et al., 2002; Lindgreen, 2000).

Objectives

Consequently this research seeks to explore contemporary marketing practice in a context that integrates transactional and relational marketing in order to respond more directly to the issues associated with theory, practice and implementation. The *Journal of Marketing* paper (Coviello et al., 2002) called for studies within the context of different industries and for replication of the study to test further the emerging themes. In particular the paper noted that there was no clear cut distinction between transactional and relational marketing and that rather than being mutually exclusive these types of marketing were practised concurrently. One important contribution of this study was with respect to the plural nature of marketing practice. This has helped to inform the research questions guiding this study:

- What is the relative emphasis on transactional and relational marketing practices within marketing practice in Ireland?
- How do different types of firms relate to their markets in terms of their contemporary marketing practices?

The findings from this study will be used for comparative studies with data from other countries for benchmarking purposes. In addition this confirmatory study at a national level will form the foundation for more detailed quantitative and qualitative investigations.

Research Methodology

Contemporary Marketing Practice Framework

The marketing framework adopted for the study was the Transactional to Relational Marketing Approaches (Brodie et al., 1997; Coviello et al., 2002). This framework classifies both transactional and relational exchange on various dimensions, which can be used to judge the dominant marketing practice within companies. This framework (see Table 9.1) considers a pluralism of marketing approaches by identifying four dominant marketing perspectives, from transactional to relational (databases, interaction and network marketing). The framework is operationalised by means of a questionnaire.

This research framework was designed to study contemporary marketing practices, both transactional and relational, in Ireland across multiple firm types serving different markets with different products and services. It utilised the common analytical framework and questionnaire of the *Journal of Marketing* study discussed above.

Table 9.1: Four Aspects of Marketing Classified by Exchange and Managerial Dimensions

	Transactional Relational			
	Transaction Marketing	*Database Marketing*	*Interaction Marketing*	*Network Marketing*
Exchange Dimensions				
Purpose of exchange				
Nature of communication				
Type of contact				
Duration of exchange				
Formality in exchange				
Managerial intent				
Managerial Dimension				
Managerial focus				
Managerial Investment				
Managerial Level				

Source: Adapted from Coviello et al. (2002)

This is therefore a replication study using a standard questionnaire, modified only slightly for cultural context, of an accepted research methodology. Additional studies using the same methodology have been, or will be, conducted in New Zealand, Holland, Finland, United States, Canada, Sweden, Great Britain, Argentina, Russia and the UAE.

Sample and Data Collection Method

Replicating the Coviello et al. (2002) research design, this study involved convenience samples of managers who were provided with a self-administered structured questionnaire. These practicing managers (predominantly at middle manager level) were attending an evening degree course at Trinity College Dublin. The companies were predominantly medium to large with a range of firm types and markets served. A more detailed profile of the sample firms appears in Table 9.2 overleaf.

Though a non-random technique, the use of full-time practitioners and part-time students in this way has empirical support (Coviello et al., 2002; Neelankavil et al., 2000). Of the 45 surveys that were returned, only 39 were usable, which is adequate for the purpose of this study and compares favourably with other studies (Finland (22), Sweden (20), Canada (58), United States (76), New Zealand (132)) within the network.

Table 9.2: Profile of Companies Surveyed

Type of Company		**Growth Rate (Last 3 years)**	
Business to business service	41%	Over 11%	90%
Consumer services	39%	Over 30%	19%
FMCG/Durables	25%	**Size of Company**	
Non for profit	15%	Medium to large (Average turnover)	70m
Markets Targeted		Average number of employees	1,000
Consumer	24%	**Years of Operations**	
Business	46%	In business over 11 Years	70%
Both	35%	% of marketing personnel to other	20%
Markets Served		**Type of Company**	
Export (over 50% of revenue)	32%	Irish owned	56%
Domestic only	37%	Joint ownership	13%
Domestic and export	13%	Totally foreign owned	31%
		Division of a larger organisation	58%

The respondents were marketing professionals (90 per cent) with over half having held their position for between one and three years (52 per cent). Movement in the profession was evident with only 33 per cent stating that they had been in this position for greater than three years. Interestingly, the interchange of personnel from other departments into marketing was evident, as 67 per cent had worked in the company for longer than four years and had therefore worked in some other capacity before joining marketing. Most marketing practitioners had a degree (74 per cent) with 37 per cent having a postgraduate qualification. A very worrying figure was the lack of a marketing focus to their degrees and of even greater concern was that only 51 per cent of them had any marketing qualifications or training. The average age of marketing practitioners was relatively low with only 19 per cent older than 46.

SURVEY FINDINGS AND DISCUSSION

The initial findings give interesting insight into contemporary marketing practice in Ireland. A Likert scale questionnaire (1–5) format was used and the response averages out of five are used to demonstrate the findings in this area. The twelve questions in this section can be reclassified under four main headings:

1. Marketing Activities – Transactional and Relational
2. Marketing Resources Allocation (People, Time and Money)
3. Marketing Performance
4. Communications/Contact with Customers

Marketing Activities – Transactional and Relational

Question 1 explored general marketing activities. The move to relationship marketing and a focus on customer retention versus attraction can be seen to be slowly emerging, with a dual focus on attracting new customers (4.13) and retaining existing customers (4.19). There was less development of more sophisticated relationship marketing practices with fewer respondents opting for the development of co-operative relationships with customers (26 per cent) or the more networked aspects of business (21 per cent). These findings lend support to the diversity of marketing practice but show a continuing focus on the traditional practice of attracting new customers.

In contrast to the above general approach, when related to actual specifics of the orientation of their marketing planning, a focus on the more transactional aspects of marketing came to the fore. The dominant focus was on the product/brand service offering (4.61) with a focus on customers in our markets in addition to our offer, coming second at (4.39). The more relational practices of "planning to build more one-to-one relations with customers in our market(s)" or "individuals in organisations we deal with" (3.37) and the more networked approaches (3.36) were less in evidence. This could support the more aspirational nature of relationship marketing while the reality of marketing focuses on more traditional marketing practices.

Marketing Resources Allocation (People, Time and Money)

Resource allocation is often evidence of the focus of activity within a department, including spend on information technology and organisation of marketing operations. There was evidence that the dominance of the marketing mix concept still prevails with the focus of resources on product, promotion, prices and distribution (or some combination of these) (4.22). There was much less of a focus on developing relationships, with an average response of 3.22 and "developing our organisation's network relationship within our market or wider marketing system", with an average score of 3.26. This finding reiterates the support for the contention that marketers are struggling to embrace the relational concepts and that the more traditional transaction marketing mix focus is still prevalent and utilised with relational techniques.

Marketing and Information Technology

Despite discussion of the importance of IT to marketing practice (Brady et al., 2002; Coviello et al., 2001a, 2001b) there was less evidence of dominant use of IT. For relationship marketing practices authors have ascribed a dominant role to IT and many contend that it is only through IT assimilation that marketers can successfully practice relationship marketing (Copulsky and Wolf, 1990; McKenna, 1999; Fisher et al., 2000). Investment in IT, particularly databases and communications networks, can therefore be an indicator of the move to more relational focus. There was evidence of some investments in technology, namely databases, with an average 3.27 response rate suggesting that database technology, to improve communication with customers, was a focus of their marketing resources. There was less evidence of use of some standard ITs with websites and marketing with IT only rating 2.91 on the scale.

Marketing Operations

The demise of the marketing function has been much discussed in the literature. In terms of organisational structure the marketing function, at an average of 3.65, was the main operational choice. Interestingly, the managing director or CEO played a major marketing role in many companies at an average of 3.00. There was some evidence of the concept of the part-time marketer (Gummesson, 1999) with a score of 2.71 for "non-marketers who have responsibility for marketing and other aspects of the business (for example, general manager)". Therefore, there is some evidence of the demise or reorientation of the marketing department as discussed in the literature (Bruce et al., 1996; Piercy, 1998).

In general the findings here show that there is no dominant organisational form across companies and that, in agreement with Baker (2000), marketing practice in some way permeates throughout the organisation. For relationship marketing to succeed, this is seen as a prerequisite (Gummesson, 1997).

Marketing Performance

The profit generation focus was in evidence (4.21), though "building a long-term relationship with a specific customer" (3.97) and "forming strong relationships with a number of organisations in our market or wider marketing system" (3.78) were both strongly represented and show that there are often multiple and perhaps conflicting purposes, though the profit motive dominates. These findings highlight the challenges for marketers who have to have a long-term perspective for market and relationship development but also have to achieve profit in the short term.

Performance Measure

There is evidence of pressure on marketing to prove that it does create value and that it is necessary for business success (Ambler 2000, 2001; Sheth and Sisodia, 1999). Measurement of marketing performance had a predictably dominant financial focus with the highest average score for any question (4.57), though customer-based measures (for example, customer satisfaction or retention scores) (3.65) were also in evidence along with effectiveness measures (3.48), with the least popular being competitive measures such as market share (3.44). However, when this question is linked to growth rates and performance of the organisation relative to competitors there are some inconsistencies. In general, respondents suggest that they are performing better than their competitors on competitive measures (3.72) but to a lesser extent on effectiveness of marketing activities (3.23).

The dominant focus to the marketing mix was evident (3.73), though again the move to relationship marketing (3.26) and networking (3.21) also existed. There is some evidence of technology utilisation, with a 2.97 average response for use of database tools to target and retain customers and an average of 3.16 for "using internet and other interactive technologies to create/mediate dialogue between our firm and our customers".

Communications/Contact with Customers

Analysing their choices of marketing communications, targeting a specially identified segment was the dominant choice (4.38) but mass marketing was surprisingly high at 3.34. Many of the companies focused on individual interactions (3.47) or networking (3.47) and so personal selling is utilised by many of the companies. The concept of integrated communications using a variety of communication/promotion media was in evidence. A variety of tactics were used to reach customers but reliance on mass market communications shows that traditional marketing techniques still prevail.

Primary Customers

A diverse range of communication options were utilised. The analysis showed a lack of face-to-face contact with primary customers. Two explanations suggest themselves: evidence of a focus on traditional marketing mix practices rather than customer contact or an indication of the non-customer-interfacing role of marketing, with face-to-face negotiations being the role of the sales force. Formal meetings with customers dominated (3.97), though meeting at a formal business and an informal social level was also prevalent (3.34) which could indicate the relatively small size of the Irish market. There was also evidence of a move to more impersonal communication with more interactive technological methods used for contact (3.09).

Desired Contact Levels from the Customer's Perspective

The patterns here revealed that there is a perception that customers desire ongoing one-to-one contact, which had the highest average response rate of 3.60. The option of no future personalised contact was only suggested by (1.84) which had the lowest average response rate. This indicates that companies perceive that customers want more contact but, related to the findings above, are finding it difficult to provide that contact.

Information Technology and Marketing Practice

Specific questions with respect to IT assimilation were included and the findings show that companies were medium (45 per cent) to high technology (48 per cent) organisations. The trend was for improvements in this area over the next five years. This confirms the findings in other studies (Brady et al., 2002; Desai et al., 1998) and concurs with a recent Irish study that showed that firms are encountering challenges to the introduction of a range of ITs (Ahmed and Brannick, 2002). This research confirms that the majority of companies are utilising IT to automate or reinforce the current position/practices (53 per cent) or using IT to extend or improve existing marketing efforts (58 per cent) rather than to transform their practices. Ecommerce adoption is evident through the stages of ecommerce assimilation, which averaged 49 per cent implementation.

Discussion

This research reinforces the contention that there is a pluralism of marketing behaviour and these findings are largely consistent with the original 2002 study that suggested this research. Several interesting additional insights emerge. This work also indicates the need for developments in marketing education to reflect the pluralistic nature of marketing. It portrays businesses as utilising traditional marketing techniques, whilst also embracing relational focused practices to a lesser extent. There is also evidence of a profession which has a whole new Pandora's Box of IT applications, highlighting the need for technological capabilities within marketing. This demands a new skill from marketers, namely the understanding of IT both internally and externally. The enhanced need for technology in marketing must also form a core part of marketing education (Brady et al., 2002).

Further comparative analysis of these research findings in relation to other international replication studies is currently being pursued by the authors in order to more fully address the second research question. At the same time there is a recognised need for larger quantitative and qualitative studies in order to contribute to the current and future developments of marketing theory and to guide practice in Ireland. There is no single view of marketing practice, with a variety of different approaches, methods and theories abounding (Saren, 2000) and the challenge is for researchers to conduct further studies at a national level.

It is worth noting that a worrying statistic from the study was that over half of marketing practitioners have no marketing qualifications and this information must be of interest to the educational bodies, professional associations and government.

Conclusions

Irish contemporary marketing practitioners utilise a range of marketing practices, applications and techniques, and rather than the demise of the transactional marketing mix this continues as a necessary component of marketing practice in tandem with relationship marketing. With the challenges this brings for practitioners, we now, more than ever, need marketing education which will prepare marketers for more diverse marketing practices which will be explained with respect to their marketing conditions, customer base, markets and other contextual factors. Marketers must be aware of the challenges but also the wide range of marketing strategies and tactics available to them as they operate in a more complex and difficult marketing environment. Theorists and researchers must study this while educators must prepare students and businesses for this myriad of challenges. This study demonstrates the need for the further study and integration of marketing theory and practice in order to disseminate and develop leading-edge capabilities within industry.

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