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International Journal of Project Management: a review of the first ten years

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The management of projects within various industrial sectors is an internationally recognised professional discipline which enjoys support from a small but growing community of researchers, scholars and enquiring practitioners. Specialist academic and professional journals which serve the field are relatively new. One of the prime journals, the *International Journal of Project Management*, celebrated ten years of continuous publication in 1992. In the ten years since its inception, the *International Journal of Project Management* has reached a level of stability in terms of the numbers of papers it publishes. Its papers predominantly review practical experience and literature. Some case studies have been published, but relatively few published papers have been based on empirical data. Most of the papers contribute interesting insights and describe new techniques, but few have contributed to the more formal aspects of the development of the discipline of project management by building and testing models and theories. The papers address a broad range of aspects of project management in an increasingly wide variety of industrial sectors, although the construction industry remains predominant. The journal attracts papers from practitioners and academics from various types of department, in both cases from many parts of the world. The journal has achieved a great deal in providing a forum for scholarly insights and debate about project management. However, progress has been less dramatic in terms of the development of the underlying theoretical basis of project management. Given that no other journals appear to fulfil this role, the paper concludes by speculating on the future development of project management as a discipline.

Keywords: bibliometrics, research trends, discipline reviews, meta-analysis

The *International Journal of Project Management* (IJPM) was first published in Spring 1983. 1992 marked ten years of the journal's existence. This paper considers the papers published during the first ten years of the IJPM. It analyses the project management issues which have formed the focus for the papers and the way in which those issues have been addressed. It also identifies frequent contributors, and their employers and countries of origin. The paper comments on the development and maturity of project management as a distinct field of academic enquiry and as a separate discipline. However it should not be considered a guide to research and scholarship in the field of project management in general, and it should not be taken to reflect an individual author's standing in the project management community. There are many other journals which would have to be

considered before a true reflection of the field could be provided. Each of these has a distinctive orientation in terms of the types of paper published and the papers' authorship and readership.

The paper has been written against a background of increasing pressure on researchers, academics and practitioners to justify their activities. The effect of such pressure has been to place greater emphasis on the communication of research and novel practices, of scholarly debate and of developments in techniques. In the academic world, communication is central to both the promotion of knowledge and the development of reputations and careers. In the world of practice, scholarly communication is often used as a means of publicising new techniques and systems and the availability of professional services. Both types of

communication have commonly been found side by side during the ten years of publication of the IJPM.

Whilst there are many forms of communication channel, those which are the most permanent and durable are forms of published literature, especially refereed journals. An established refereed journal is a repository of good and novel insights gained from data based research, scholarly enquiry, rigorous analysis of current practice experience, and careful logical debate about an issue or phenomenon.

Within all fields of study there is a need for knowledge of the ways in which an academic and professional discipline has developed, and for strategic overviews of the main dimensions representing the subject matter and classification of relevant research methods and tools. In many disciplines, studies that address these concerns are termed meta-analyses. Their emergence signifies that a discipline has become sufficiently coherent to warrant study and academic enquiry into the field itself. When, in a subject area, there begins to be research into its research, one interpretation is that this signifies that an underlying theory about the discipline is starting to evolve. The discipline of project management is new. One way of progressing its evolution is to reveal its structure and to develop its underlying theory. As a contribution to this process this paper provides a meta-classification of the subject matter and research approaches within the field. The classification has emerged on the basis of both theoretical considerations and the current infrastructure of the discipline, and it is tested by empirical study of the IJPM. It arises out of a similar meta-classification developed from an earlier study of construction management¹.

The remainder of this paper is devoted to this exploration of the IJPM and, as far as the study of the journal is able to reveal, the development of project management as a discipline. After a brief review of previous research, a number of questions are asked about the journal. These concern the nature of the authors, their employers, and, of potentially greater interest, the characteristics of the papers. Following a description of the methodology, the main body of the paper presents a series of analyses of the papers, each supported by a number of tables and figures. Where appropriate, relevant statistical tests have been used to support the findings.

The section following the main body of the paper discusses the possibility that a distinctive style of IJPM paper may be emerging. It then explores whether the characteristics of the papers reflect those of a well established discipline or one in the making. The concluding section suggests that the papers are stable in terms of their research style, but that they have an evolving subject focus which reflects general economic developments, i.e. a move away from manufacturing based economies towards service and information-intense economic activities.

Previous work

Despite the shortcomings inherent in the analysis of just one academic journal, such an inquiry is both timely and valuable. The IJPM is the only independent established international journal with a mission which directly corresponds with that of the main international community of researchers and practitioners in the field of project management, as represented by INTERNET. Of course, other journals have missions which either overlap with part of the

IJPM's mission, for example in the field of construction management, or are focused on a particular specialism, such as information technology. In addition, other project management journals are published elsewhere which tend to have a narrower international coverage or be more specifically focused on construction projects. For these reasons, a review of the IJPM is more likely to represent a review of the international project management discipline.

This review is timely because, in most countries, the place of project management as a profession and as an academic subject in its own right is currently being redefined. This is leading to major changes in the way in which project management is viewed in industry, and in the expectations of those who support project management and its practice as either employers or clients of project managers. In addition, the professional and industrial base of project management is becoming increasingly questioned in practice in terms of its underlying theories and principles and its breadth and nature of application.

In particular this paper seeks to provide a partial map of the discipline of project management. It follows a parallel study¹ of the journal *Construction Management and Economics* and is part of an ongoing programme of work by the authors that seeks to gain insights into publication patterns and research processes within the interface of the broader management and built environment disciplines.

Research questions

Clearly the key issues which the analysis could cover are constrained by the nature of the IJPM and its editorial policies, and, within these, the self-selecting nature of those who seek to publish in it and their particular interests, orientations and skills. However, the case study does represent a good starting point for a discipline review. In this review, some of the obvious yet important questions are as follows:

- Who has published in the IPJM?
- What has been published?
- Where was it written?
- Is a style of IJPM paper and research emerging?

All of these questions can be modified and then influenced by a series of further questions about whether the IJPM differs from other journals and whether it is changing over time, and about its influence and role within the development of the discipline.

Data

Journal

The IJPM is an international refereed journal which was established in 1983 by the Association of Project Managers in the UK on behalf of the International Project Management Association, which is an affiliation of European national project management groups (eight at that time). An international editorial board was established to formulate policy, the members of which were drawn from both the academic and industry sides of the profession. The initial policy was to help managers recognise the existence of projects and guide them in their management. Also, it emphasised the procedures, concepts and techniques that led to the successful planning and control of projects, and

acknowledged the importance of human reaction and motivation⁵.

In 1987, the editorship of the journal moved from the founding editor G F Waller to B Curtis. However, throughout its first ten years, the journal was very stable in terms of the volume of papers and its frequency (quarterly).

Analysis

The analysis of the characteristics of the journal carried out in this paper is divided into two five year periods, the hypothesis being that the first corresponds to the journal's formative years, and the second to its maturing period. Care needs to be taken not to confuse the development of the journal with the development of the discipline, although without doubt the development of one is closely related to the development of the other.

All the papers published in the IJPM during 1983–92 were included in this study. Ten volumes were published, comprising 40 issues with 347 papers written by 352 authors from 32 countries. The size of each volume is given in Table 1. There were 1978 authored pages in total. Of the 347 papers, 258 were written by one author, 64 by two authors, 15 by three authors, two by four authors, one by five authors and another by six authors. Each paper usually included a title, the names of the authors, and their affiliations. However, in a few cases, the absence of some of this information prevented detailed analysis and classification. For this reason not all of the 347 papers were included in some of the analyses that follow.

Method

Developing a database

An important methodological issue was that of constructing a classification framework for the subject and style of the papers. A number of attempts were made in this area before a satisfactory solution was found. Eventually an approach based on multiple independent classifications was adopted. The resulting framework classified the subject content of each paper in two ways and the style of each paper in two ways. This multifaceted classification provides a meta-model for the characterisation of the discipline of project management. The meta-models which such classifications imply are important for the analysis of a discipline, interrelating different areas of study and identifying emerging or neglected themes. The definitions of categories within the four dimensions discussed in this paper are to be found in the appendix.

The meta-model has two groups of dimensions, one concerned with content and the other with style. It is proposed that these should be the two principal means of characterising research in the project management discipline. In terms of content, the nature of project management is such that two clearly distinguishable dimensions can be defined. The first of these is the class of subject; this is given by the

Table 1 Pages in volumes of IJPM

	Volume										Total
	1	2	3	4	5	6	7	8	9	10	
Number of pages	200	161	200	186	183	187	198	202	227	234	1978

set of terms that describes the academic discipline basis. These arise from the multidisciplinary origins of the discipline and are similar to the breakdowns that are used at a higher level by bodies such as INTERNET. This is an important means of relating a discipline to bodies of knowledge.

The second content dimension is the industrial sector. This distinguishes the discipline in terms of the professional demarcations within the field and the variability within the products of the different project sectors. Different authors do, or do not, see significant differences between buildings, engineering infrastructure and the products of other product-based activities, and conduct research addressing their needs separately or together, depending on their viewpoint.

The two style dimensions of the meta-model reflect a process view of research or scholarship. Processes consist of inputs, activities and outputs. The first dimension is concerned with the sources of information on which a paper is based, and this primarily relates to inputs. The second is related to the contribution of a paper, and it has closer links with research activities and outputs.

All the papers were examined to see if they could be obviously assigned to one category within each of these four classifications. This was done by the two authors independently. The initial level of agreement was high and almost all the differences were reconciled. On the subject dimensions (that is, class and sector), the initial level of agreement was very high. For the two style dimensions the initial level of agreement was lower. After further consideration the level of agreement for all classifications rose to almost 100%. Those papers for which agreement could not be reached remained unclassified or unattributable in terms of the relevant dimensions.

Weighting of papers

Within the bibliometrics literature a range of approaches has been developed for assessing the contributions of individual authors to a journal and to jointly authored papers. Four measures were considered: unweighted and weighted papers and unweighted and weighted pages. An unweighted paper is assigned to an author, department or institution if his/her/its name appears as any one of the authors. The weighting for a weighted paper is a fraction that is dependent upon the number of authors. The same principle applies to the number of pages. In this analysis all the papers have been deemed to be of equal importance.

Analysis and results

The reviews in this section are based principally on weighted papers as the main determinant and weighted pages as the second. In most cases the analyses consider the pattern of publication over two five year periods (1983–87 and 1988–92) as well as over the complete ten year period. Some analyses have drawn on the results of statistical significance tests which have considered differences in the distribution of papers for a classification over time. On occasion, some of the smaller categories in the tables have been combined into an 'others' category.

Who has published in the journal?

This question essentially relates to the structure of that part of the research and practice community which has published

in the IJPM, whether it is stable or changing, and whether publication is based on a hard core of regular contributors or whether it is shared amongst a large and diffuse group with members who publish infrequently. The answers to these questions reflect, in part, the nature of academic and professional leadership in the discipline.

Initial analysis of the author data reveals a situation that is common to most journals in which a very few authors publish several papers and many authors publish a few (see Table 2). Indeed the distribution of frequency of authorship appears to follow that found for other journals: an approximated inverse square law³. However, compared with other journals (see Reference 1), the strength of this relationship suggests a low level of author concentration, as might be expected in a multidisciplinary field such as project management.

The six most frequently published authors contributed 27.7 weighted papers. Over the period, 5% of the authors, that is, 18, accounted for 19% of the papers and 19% of the pages. However, those who enjoyed high publication rates in the first five years of the IJPM were less prominent in the second five years. Since it was established, the journal has in due course attracted a new group of major contributors. This reflects the evolution of the reputation and position of the journal over the period and the growth in its familiarity to potential authors. The changing identity of regular authors may also indicate the careful steps taken by the founding editor in ensuring the publication of contributions from a number of well established researchers and practitioners in order to develop the journal in its early years.

What has been published in the journal?

This question is concerned with the stability of the discipline of project management, as far as it is reflected in the IJPM, whether it is focused or diffuse, and the sectors which are addressed. These are the dimensions of the meta-model of the discipline discussed above. The summary results for the classification of the information sources used for the papers showing trends over time are given in Table 3.

The sources of information on which papers are based have been very stable between the two periods; the papers have predominantly been reviews, with some case studies. Many authors have presented in a rigorous way their personal experience of managing projects for the benefit of others, but relatively few have presented papers based on empirical research or empirical data. In part this reflects the high proportion of papers from practitioners who have used their projects as a testbed for new ideas, as a living laboratory, compared with academics with their formally structured approaches to research.

The contributions of the papers (see Table 4) have predominantly been insights into the project management process (41%). The presentation of new techniques and the development of new models for managing or analysing parts of the project management process account for a further 15% and 12% respectively, but the testing of models, the development of new systems or of new theory have received little attention. Again, the basis of project management as a practice rather than a theory, owing in part to its relative newness, seems clear. There has been little change in the patterns over time.

Table 2 Authors most frequently published in IJPM

Author name	Weighted papers	Weighted pages	Unweighted pages	Weighted papers (1983–87)	Weighted papers (1988–92)
Jaafari, A	5.00	41.00	41	3.00	2.00
Palmer, C	5.00	37.00	37	5.00	0.00
Wearne, S	5.00	12.00	12	4.00	1.00
Knoepfel, H	4.70	32.90	41	1.50	3.20
Yeo, K T	4.00	27.00	27	0.00	4.00
Blankevoort, P	4.00	20.00	20	4.00	0.00
Cavallone, S	3.33	13.33	16	3.00	0.33
Mikkelsen, H	3.16	16.67	26	0.83	2.33
Dingle, J	3.00	22.00	22	1.00	2.00
Hutcheson, J	3.00	22.00	22	3.00	0.00
Saunders, R	3.00	21.00	29	0.00	3.00
Barnes, M	3.00	19.00	19	1.00	2.00
Morris, P	3.00	18.00	18	2.00	1.00
Gilbert, G	3.00	16.00	16	2.00	1.00
Woodward, J	3.00	14.00	14	3.00	0.00
Epling, J	3.00	10.00	10	2.00	1.00
Laufer, A	2.83	22.33	31	1.50	1.33
Arditi, D	2.83	14.33	27	0.83	2.00
Trimble, G	2.50	12.50	16	1.50	1.00
Chapman, C	2.41	23.17	44	0.58	1.83
Riis, J	2.16	11.67	22	1.83	0.33

Table 3 Classification of papers by source

Source	All years	Percentage	1983–87	Percentage	1988–92	Percentage
Reviews	196	58	94	59	102	58
Case studies	103	31	50	31	53	30
Empirical data	38	11	16	10	22	12
Total attributable	337		160		177	

Table 4 Classification of papers by contribution

Contribution	All years	Percentage	1983–87	Percentage	1988–92	Percentage
Model testing/fitting	8	2	4	3	4	2
Model building	41	12	16	10	25	14
System building	18	5	8	5	10	6
Theory building	11	3	7	4	4	2
Insights	207	61	95	59	112	63
New techniques	52	15	30	19	22	12
Total attributable	337		160		177	

Table 5 Classification of papers by subject

Subject	All years	Percentage	1983–87	Percentage	1988–92	Percentage
Human factors	50	15	26	16	24	14
Project startup	21	6	8	5	13	7
Project procurement	14	4	6	4	8	5
Project planning	40	12	26	16	14	8
Conceptual models	33	10	14	9	19	11
Project performance	22	7	6	4	16	9
Project environment	39	12	18	11	21	12
Project organisation	52	15	32	20	20	11
Project information	32	9	12	8	20	11
Risk management	23	7	10	6	13	7
Innovation	11	3	2	1	9	5
Total attributable	337		160		177	

Over the period in question, the most frequent subjects for papers have been project organisation, project environment and human factors, but there have been some significant changes in the distribution of subject areas between the two periods (see Table 5). Papers on project planning and project organisation have declined by nearly one-half, whilst those on project startup, project performance, project information and innovation have nearly doubled. The other areas have remained stable. It is argued that this represents a natural evolution in thinking about project management. The most obvious subjects for papers in the early period of the journal were clearly those which drew on a long history of practice of project management and which were able to contribute to a basic skeleton of understanding. More recently, attention has shifted to detailed considerations and to placing flesh on the skeleton. The definition and interpretation of these categories is given in the appendix.

Table 6 and Table 7 show the distribution of papers between the industry sectors to which the papers related. It was not possible to classify many of the papers in this way as they dealt with project management in a generic way. However, as might be expected, by far the most frequently addressed industry was construction, followed by papers relating to the information and service sector and the process industries. In terms of the detailed focus, the IT sector accounted for a surprisingly large number of papers.

Over the period in question there was a significant increase in the proportion of papers dealing with facilities, utilities and information and service industries, and a general decline in the other areas, at least for those papers which were classifiable (see Table 7). Neither the sector nor the subsector totals add up to close to the total number of papers published, as many papers were not sector specific. The sector and subsector totals also differ, as some of the papers within a sector did not relate to any particular subsector.

Table 6 Classification of papers by industry subsector

Sector	Subsector	Sector total	Subsector total
Agriculture/development:		3	
	Rural development		1
	World Bank		1
Construction:		103	
	Building		17
	Civil engineering		13
	Housing		1
	Urban design and planning		2
	Maintenance		0
Facilities and utilities:		17	
	Telecommunications		2
	Energy and power generation		4
	Gas		3
	Transport		1
	Education		2
	Defence		2
	Health and medical		2
	Electricity		0
Process industries:		25	
	Nuclear		3
	Offshore and underwater		6
	Oil		6
	Plant		7
	Petrochemical		1
	Chemical		2
Manufacturing:		16	
	Cars		3
	Product development		3
	Pharmaceuticals		1
	Ship building		1
	Aerospace		2
Information and services:		27	
	IT systems		16
	Data processing		2
	Research and development		8
	Government		1

Table 7 Classification of papers by industry sector

Sector	All years	1983–87	1988–92
Agriculture	3	2	1
Construction	104	56	48
Facilities/utilities	16	5	11
Process industries	25	14	11
Manufacturing	16	8	8
Information/service industries	27	6	21
Total attributable	191	91	100

Where was it written?

The sources of the publications can be considered in a number of ways, by, for example, the type of institution, the name of the institution, and the country of origin. This question can provide insights into the institutional structure of the discipline, for example in terms of whether the discipline is strongly centred around a small number of key institutions in particular countries with specific academic and professional orientations. This in turn provides information about the accessibility of the discipline, and whether it is bounded by national or professional cultures, and the nature of patterns of communication within the research community.

Table 8 shows that practitioners in the private sector have provided the greatest number of papers, with universities a close second. The latter became the majority contributors in the second five-year period. The public sector and

research institutes have contributed relatively few. Indeed, the number of papers from these sources has fallen. Private consultants as opposed to members of companies have also made a major and growing contribution. This partly illustrates one of the roles of the IJPM in launching new consultant techniques and systems, and acting as a means of consultant promotion. It also reflects the growing importance of project management within universities, and the status of the journal within academic circles.

Table 9 provides simple counts of weighted papers and pages by the titles of the academic departments from which each paper from a university has originated. The area covered by the journal is clearly at the junction of the broader disciplines of civil engineering, construction, management and the social sciences. Whilst most academic papers have come from departments of civil engineering, there has been a movement away from ‘construction’ departments towards those with a ‘management’, ‘building’, ‘business’ and ‘engineering’ background. This trend is clearly illustrated in Table 10 which groups the titles of academic departments into generic headings. However, Table 10 may be affected by the changing pattern of internationalism of the journal and the consequent influence of the differing terminologies used to describe academic departments. It may also reflect changes in the titles of departments rather than a real underlying change in the sources of contributions. It should be noted that the totals in Table 10 may exceed the equivalent totals in Table 9, because many department names contain more than one

Table 8 Classification of papers by type of institution

Institution	Weighted papers	Weighted pages	Unweighted pages	Weighted papers (1983–87)	Weighted papers (1988–92)
Private practice	121.50	677.67	865	69.00	52.50
Universities	111.67	702.05	1050	50.26	61.41
Private consultants	49.66	282.00	327	22.33	27.33
Public sector	9.00	45.50	53	5.00	4.00
Research institutes	7.50	48.00	65	5.00	2.50
Total attributable	299.33	1755.22	2360	151.59	147.75

Table 9 Names of most frequently publishing university departments

Department	Weighted papers	Weighted pages	Unweighted pages	Weighted papers (1983–87)	Weighted papers (1988–92)
Civil engineering	26.00	154.00	217	13.00	13.00
Civil and mining engineering	5.00	41.00	41	3.00	2.00
Institute of Local Government Studies	5.00	37.00	37	5.00	0.00
Construction management	5.00	23.00	23	3.00	2.00
Accounting and management science	4.15	37.00	84	1.16	3.00
Business administration	4.00	27.50	34	1.00	3.00
Construction science	4.00	16.00	16	3.00	1.00
Industrial engineering	3.00	22.00	38	1.00	2.00
Mechanical and production engineering	3.00	22.00	22	0.00	3.00
Business school	3.00	21.00	21	0.00	3.00
Building	3.00	16.00	20	3.00	0.00
Project management	3.00	13.00	21	1.00	2.00
Mechanical engineering	2.66	18.34	29	1.66	1.00
Management	2.50	18.00	28	0.00	2.50
Building and estate management	2.00	18.00	18	0.00	2.00
National Building Research Institute	2.00	15.00	29	0.00	2.00
Administration and economics	2.00	14.00	22	0.00	2.00
Civil and structural engineering	2.00	13.00	20	1.00	1.00
Civil, environmental and architectural engineering	1.50	10.00	14	0.00	1.50
Information systems	1.50	7.00	11	0.50	1.00

Table 10 Most frequently publishing university departments (generic names)

Department generic name	Weighted papers	Weighted papers (1983–87)	Weighted papers (1988–92)
Engineering	49.66	22.16	27.50
Management	26.15	8.15	18.00
Building	12.50	5.00	7.50
Construction	12.00	7.00	5.00
Business	9.50	1.00	8.50
Economics	9.00	1.50	7.50
Mechanical	7.66	1.66	6.00
Production	7.66	2.00	5.66
Industrial	7.50	2.00	5.50
Accounting	5.15	2.15	3.00
Project	4.00	1.00	3.00
Architecture	4.00	2.00	2.00
Environment	3.50	2.00	1.50

generic root. Similar analyses for papers from practice were not possible because of the greater diversity in naming conventions for businesses.

Overall, for the proportion of papers that come from academics, there is little evidence of a discipline which can be clearly identified by a consistent organisational location or boundary within academic institutions, although civil engineering does dominate. Indeed, the discipline is accessible to academics working in a broad range of departments, most of which are not principally oriented towards project management. The number of papers from departments of economics and business also show that the discipline has become recognised and accepted as worthy of attention by those working in mainstream disciplines. The impression gained by the authors in looking at practitioners' papers supports this view of diversity.

Evidence of the emergence of new academic institutions, new business organisations and new authors as contributors to the IJPM can be seen in Table 11. Of the organisations which contributed the largest number of papers in the first five years, only one was amongst the top five in the second five years. Some of the changes in relative positions are

substantial, as are the changes in the absolute number of contributions. It is noteworthy that an institution from Asia became the joint major contributor in the second five year period and that **the leading contributor** overall is from North America.

The analysis of journal contributions on a country basis contains some surprises (see Table 12). As the IJPM is a UK based journal it is not surprising that most of the papers are from UK organisations or that a further proportion should come from English speaking countries. Of course the journal does not reflect all of the academic work being carried out in project management and it is inevitable that, because of its origins, it will be biased towards the UK. North American authors, and others, have often viewed the journals published by the US Project Management Institute and the ASCE as the primary publishing outlets. **Northern European countries are widely acknowledged as having played a key role in establishing the discipline of project management and they are strongly represented in the IJPM. The particularly high level of contributions from Scandinavian countries should be noted. A notable absentee from Table 12 is Japan, and there are few contributions from Russia and India; these countries make a significant scientific contribution in general^{4,5}.**

Table 12 shows the **stable international base** of the journal. Over the two periods, the level of contributions from the UK has risen. The level of USA contributions has fallen slightly. The proportions of papers from those countries with professional systems similar to that in the UK (that is, the Commonwealth countries, South Africa and Ireland) have remained small, with Australia's contribution falling and that from Singapore rising. Contrary to what was found in an earlier study of a construction management journal, there is much to suggest that the IJPM has become attractive to authors in countries other than those which use English as a first language or as the principal business language, despite all the papers in the IJPM being published in English. There is some evidence of an increasing internationalisation of the journal, given the lengthening tail of countries in the second period.

Table 11 Most frequently publishing organisations

Institution	Weighted papers	Weighted pages	Unweighted pages	Weighted papers (1983–87)	Weighted papers (1988–92)
Texas A&M University, USA	8.50	44.00	48	5.00	3.50
Birmingham University, UK	7.50	51.50	60	6.00	1.50
UMIST, UK	5.33	25.66	46	1.33	4.00
Sydney University, Australia	5.00	41.00	41	3.00	2.00
Loughborough University of Technology, UK	5.00	30.46	73	3.00	2.00
Illinois Institute of Technology, USA	4.83	28.33	46	1.83	3.00
Southampton University, UK	4.15	37.00	84	1.16	3.00
Nanyang Technological University, Singapore	4.00	27.00	27	0.00	4.00
University of New South Wales, Australia	4.00	26.00	30	4.00	0.00
IBM	4.00	24.00	40	1.00	3.00
Philips	4.00	20.00	20	4.00	0.00
Paisley College of Technology, UK	4.00	19.00	19	4.00	0.00
Bradford University, UK	4.00	9.00	9	4.00	0.00
Technion, Israel	3.50	27.00	45	1.50	2.00
W S Atkins, UK	3.50	22.00	46	1.00	2.50
Royal Institute of Technology, Sweden	3.00	20.00	23	1.00	2.00
Snamprogetti, Italy	3.00	17.00	41	3.00	0.00
Conspectus	3.00	15.00	15	2.00	1.00
Technical University of Denmark	3.00	13.00	25	3.00	0.00
Reading University, UK	3.00	13.00	13	1.00	2.00

Table 12 Most frequently publishing countries

Country	Weighted papers	Weighted pages	Unweighted pages	Weighted papers (1983–87)	Weighted papers (1988–92)
UK	143.00	807.67	1065	67.50	75.50
USA	50.60	324.37	470	25.50	25.10
Denmark	19.33	85.34	120	11.33	8.00
Germany	14.70	84.40	99	8.00	6.70
Australia	11.00	78.00	82	9.00	2.00
Canada	10.83	73.50	106	3.33	7.50
Holland	10.50	59.00	77	8.50	2.00
Italy	10.00	46.00	78	8.00	2.00
Switzerland	9.70	56.90	79	5.00	4.70
Sweden	7.00	35.00	50	4.00	3.00
Singapore	6.00	45.00	45	0.00	6.00
Norway	5.17	29.17	54	1.17	4.00
Egypt	5.00	30.00	44	4.00	1.00
Austria	4.00	20.00	20	1.00	3.00
Israel	3.50	27.00	45	1.50	2.00
Yugoslavia	3.00	18.00	18	1.00	2.00
Finland	3.00	15.00	15	2.00	1.00
Spain	3.00	14.00	19	0.00	3.00
Czechoslovakia	3.00	6.00	8	0.00	3.00
Brazil	2.50	15.00	19	1.50	1.00
Hong Kong	2.00	27.00	27	1.00	1.00
India	2.00	14.00	14	0.00	2.00
Saudi Arabia	2.00	13.00	20	0.00	2.00
Kuwait	2.00	11.00	18	0.00	2.00
Thailand	2.00	9.00	15	0.00	2.00
France	1.00	8.00	16	0.00	1.00
Ireland	1.00	7.00	7	0.00	1.00
Russia	1.00	5.00	10	0.00	1.00
Bulgaria	1.00	4.00	4	0.00	1.00
South Africa	1.00	4.00	4	0.00	1.00
Turkey	0.67	4.67	14	0.67	0.00
Libya	0.50	3.50	7	0.00	0.50

Discussion

Is a style of IJPM paper and research emerging?

If the papers in IJPM reflect the developing field of project management then that field is characterised by both change and stability. The papers reflect the outward growth of project management from what was a predominantly construction project based activity to one in which, although construction remains strong, quite different industries are now involved. This is reflected in the industrial focus of the papers and, for example, the widening range of university departments from which papers have been received and published. There has been change also in the countries contributing the papers. In the second five years, 21 countries contributed at least two weighted papers, compared with 12 in the first five years. As might be expected, the most frequently published authors have changed significantly between the two periods. The situation appears to be one of gradual evolution in terms of where project management fits, industrially, academically and internationally.

Other areas of change relate more to the class of subject. The movement has been away from planning techniques and descriptions of organisations. More emphasis is now being given to issues of performance, innovation and information.

Despite these changes and some others, the development of the journal has been characterised more by stability than by dramatic change. For example, although some subject areas have increased in importance and others have declined, the balance of the journal has changed remarkably little. Whilst a great deal of smoothing might be expected as a

result of editorial policies and because new trends would not be represented by many papers, the relative lack of change may reflect a field in which the ingredients of the field are well defined, although implicitly, by those who choose to be involved with it. Thus the changes in the content of the journal which have taken place over the two periods may have been more the 'fine tuning' of what constitutes project management than a redefinition of the field in terms of practice or the academic base. If the IJPM reasonably reflects stability in the field of project management, then the contents of the journal can possibly be taken as an explicit expression of what constitutes project management.

Stability is to be found broadly in other aspects of the journal, such as in the balance of papers between private practice, private consultants and universities. Of course editorial policies have sought to maintain this balance, which in turn may have influenced the types of papers which have been published and their contributions. Despite this, there has been some move towards there being a greater proportion of papers from academics. However, whoever the papers are written by, the journal is characterised by papers which review techniques, situations, experiences and careers to provide very strong insights into the project management process. Relatively little emphasis is given to contributing information gathered through conventional research techniques or to building, presenting or testing new theories or models. Many papers essentially integrate and synthesise a great deal of information from many fields rather than present the analysis of information from one field in great detail. In essence these papers reflect

what many would claim is the essence of project management, that of integrating and synthesising information, decision making and leadership by using ideas from many fields.

It follows from this that, whilst project management may provide opportunities for research, the nature of that research is qualitatively different from that which might be expected in other fields, whether scientific or professional, in which analysis rather than synthesis forms the mainstay of decision making. As a result, action oriented forms of research may be more prevalent and more appropriate. These are to be found in many of the papers, particularly those from authors based in industry, who have taken the role of action researchers and have given expression to their theories and models through managing projects rather than operating as detached observers.

Conclusions

Project management as reflected in the IPJM is a stable field which is evolving slowly. The stability suggests that the field is quite well defined, albeit implicitly, and, even though construction interests are very strong, it is not dominated by any particular interest group. Given the location of the publisher of the journal it might be inevitable that it has contained a large number of contributions from the UK. However, its international nature is reflected in the large number of papers from the rest of Europe and North America.

The papers reflect a field which is very practice based, and concerned with the integration of information and experiences rather than being highly analytical or theoretical. The papers seek to improve understanding by presenting sound information, insightful reviews and good practice rather than highly abstract models of the project management process.

It is probable that the IJPM has been very beneficial to the practising project management community by providing an outlet for new and well developed ideas, practices and philosophies. Clearly it has played an important role in meeting the needs and aspirations of many of those, both academics and practitioners, who have had papers published, and in providing a focus for its readers, again both academics and practitioners. Given that the journal has now reached this maturity, there is a need to speculate further on what the future may hold. The contributions within this journal have established a clear picture of current practice, its varying practice, its various aspects, its areas of application and the nature of its existing and emerging techniques.

It could be argued that the next stage in the development of an academic discipline is the building and testing of models such that a theory of project management may emerge. Whether these would sit comfortably with the types of papers that have appeared in the first ten years of the journal is debatable.

If they would not, two scenarios are conceivable through which more theoretical and model-based contributions to project management could emerge. One is that the nature

of the journal should change to take on a mission more centrally based in theory and model building by academics. The other scenario is that the way the journal has emerged is seen to retain its value and place and that other vehicles for largely theoretical contributions to project management will emerge from other sources.

An obstacle to this happening appears to be the lack of an academic identity for project management. Despite there being a slight increase in the proportion of papers from academics in the first ten years of the leading project management journal, the organisational locations of the academic contributors within universities are not clearly associated with project management. The papers that the project management academic community have produced do not appear to have employed the sources of data or produced the types of theoretical contribution that are usual in more established academic disciplines.

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Appendix

Definition of Classifications

Classification method: subject

- *H1 (human factors)*: Safety, productivity, motivation, leadership, creativity, recruitment, teamwork, education, training.
- *P1 (project startup)*: Feasibility, briefing, requirements, definition, startup activities, project finance.
- *P2 (project procurement)*: Procurement models, contracts, contract strategies, tendering, bid evaluation.
- *P3 (project planning)*: Planning techniques, planning tools, systems, resource management, project execution, project control, project monitoring.
- *P4 (conceptual models)*: Project objectives, philosophies, determinants of performance, project complexity.
- *P5 (project performance)*: Time performance, cost performance, quality, performance, quality management, project evaluation.
- *P6 (project environment)*: Project culture, project environment, firm-level analyses, industry level analyses, business environment, internal projects.
- *P7 (project organisation)*: Alternative project organisation models, project management case studies.
- *P8 (project information)*: Information systems, communication, information retrieval, information flow, computer applications, information management, project reporting, project documentation.
- *P9 (risk management)*: Risk assessment, risk management, project disputes, claims, liabilities, insurance.
- *P10 (innovation)*: New techniques, new methods, business innovation, strategic management, technology appraisal and selection, change management.

Classification method: industry sector

- *I1 (agriculture/development)*:
 - rural development;
 - World Bank sponsored projects.
- *I2 (construction)*:
 - building;
 - civil engineering;
 - housing;
 - urban design and planning;
 - maintenance.
- *I3 (facilities/utilities)*:
 - telecommunications;
 - energy and power generation;
 - gas;
 - transport;
 - education;
 - defence;
 - health and medical;
 - electricity distribution.
- *I4 (process industries)*:
 - nuclear;
 - offshore and underwater;

- oil;
- plant;
- petrochemical;
- chemical.
- *I5 (manufacturing cars)*:
 - product development;
 - pharmaceuticals;
 - ship building;
 - aerospace.
- *I6 (information/services)*:
 - IT systems;
 - data processing;
 - research and development;
 - government.

Classification method: sources of information

- *S1 (reviews)*: Reviews or proposals based on knowledge, data and insights drawn from academic or practitioner experience; often the integration of well known facts and the provision of new insights rather than tightly argued analyses.
- *S2 (case studies)*: Individual or a limited number of linked case studies based on observation or detailed quantitative data, sometimes described within a well defined framework in order to test or illustrate specific concepts or to develop new concepts (particularly the application of statistical concepts which lead to cases which take the form of worked examples), sometimes highly descriptive.
- *S3 (empirical data)*: Presentation and analysis of empirical data, or empirical analysis of secondary data, usually according to some theoretical framework or analytical model.

Classification method: contribution

- *C1 (model testing or fitting)*: The testing of statistical or organisational models, usually through statistical analysis, parametric studies, and sometimes through discussion.
- *C2 (model building)*: Developing complex (largely static) new models, for example for forecasting and decision making (often using statistical and econometric methods).
- *C3 (system building)*: Developing complex (largely dynamic or interactive) systems, for example for operations management and decision making (this often involves planning methods, AI, expert systems).
- *C4 (theory building)*: Development or modification of theory; for example, whilst the application of mainstream management theory to project management falls into the model testing category, developments of that theory to fit project management fall into this category.
- *C5 (insights)*: The contribution lies largely in the data, insights, and discussion presented; the papers do not generate new models or theories or provide a basis for

testing existing models and theories; they provide information in a more general way.

- *C6 (new techniques)*: Demonstrating new techniques for

the analysis or management of projects, project management situations or their environments.

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Peter Lansley is a professor of construction management and Dean of the Faculty of Urban and Regional Studies at the University of Reading, UK. His major interest is in helping construction firms to improve their performance. This has led to a wide range of research, consultancy and training activities, including research on the relationship between organisation structure, management style and company performance, carried out over a period of 25 years, and his more recent work on individual and team performance in construction. His work embraces issues relating to the influence of national culture on the design and management of organisations, the impact of academic research on industrial innovation and national wealth, and the response of contractors to economic recession.

