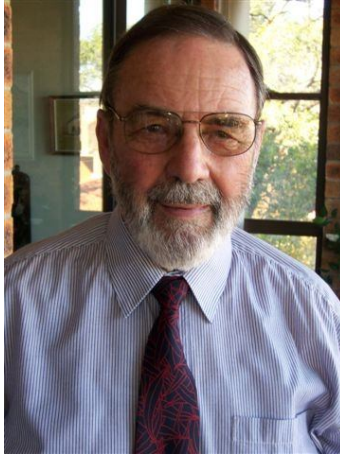


## PM WORLD TODAY – FEATURED INTERVIEW – MAY 2009

## Interview with Alan Stretton

*Project Management Pioneer  
AIPM Life Fellow*



**Alan Stretton**, PhD, Fellow of the Australian Institute of Project Management (AIPM) and former chair of the PMI Standards Committee, is one of the world's most widely respected figures in the project management profession. Alan retired from his second project management-related career in 2006, as Adjunct Professor of Project Management in the Faculty of Design, Architecture and Building at the University of Technology, Sydney (UTS), Australia, which he joined in 1988 to develop and deliver a Master of Project Management program. Alan has a BE Degree in Civil Engineering from the University of Tasmania and a Masters Degree in Mathematics from the University of Oxford (UK). He was Tasmanian Rhodes Scholar for 1948. He was awarded an honorary PhD in Strategy, Programme & Project Management by Ecole Supérieure de Commerce de Lille, France in 2005. Prior to joining UTS, Mr Stretton worked in the building and construction industries in Australia, New Zealand and the USA for 38 years, which included the management of construction, R&D, information and control systems, internal management education programs, and organisational change projects. At the end of 1987, Alan retired from his first career after 26 years at Lend Lease Corporation, now one of the world's largest construction and property development companies. Since 1982, Alan has been involved in the development of PM-related courses and curricula at major universities in the Sydney area, and in the development of professional standards for both the Project Management Institute (PMI) in the USA and the Australian Institute of Project Management (AIPM). Alan Stretton was elected a Life Fellow of AIPM in 1996. Since 1977, Alan Stretton has published over 70 professional articles and papers related to project management, including 34 presentations at various project management conferences around the world. Alan was named a global advisor to PMForum in August 2007.

**Editor's Note:** *Alan Stretton is one of the world's most respected authorities on the subject of professional project management. A witness to and participant in many of the historic developments in the project management field, Alan has managed projects and programs, been an executive in one of Australia's largest project-based companies, has been a researcher and professor of project management, and continues to provide advice to leaders in the field. We are honored to provide this further glimpse into his personal history. Additional information about Alan Stretton can be found at <http://www.pmforum.org/blogs/news/2007/09/alan-stretton-aipm-fellow-former-rhodes.html>.*

**PM World Today (PMWT):** **Alan, how did you first learn about and become involved in project management so many years ago?**

**Alan Stretton:** My first jobs after graduating as a civil engineer in 1947 were in construction – canals, roads, townships and the like. As most Australian construction engineers saw themselves at the time, we were simply engineers progressing construction projects. We did not see ourselves as construction project managers (or sometimes as design-and-construct project managers), although that is what many of us were most certainly doing.

This engineering perspective changed from 1961, after I had joined a company called Civil & Civic Pty Limited. (I had had four different employers in the meantime). Civil & Civic had already been in the project management business for some time, but not yet on a large scale. It is probably worthwhile discussing the evolution of project management in Civil & Civic from the mid-1950s, because it evolved quite independently of any external influences.

**PMWT:** **OK, tell us about project management in Civil & Civic.**

**Stretton:** Civil & Civic was formed as a construction company in 1951, operating primarily in the building industry, which in those days always operated on the basis of architects designing and construction by competitive tender. At that time in Australia there was no established concept or practice of managing the design process, or value analysis, design efficiency/effectiveness, or the like. As constructors, Civil & Civic was very aware of the inefficiencies, particularly in terms of constructability, that were inherent in most building designs.

From around 1954, Civil & Civic began doing its own development projects, starting with a major property subdivision, and then moving into commercial building projects. On the subdivision project, a "rescue" design analysis process achieved a 40% cost reduction from the original consultants' designs and projected capital expenditure. As a result, from that point onwards, Civil & Civic appointed its own "project engineers" to manage the design phases of all its own development projects, and to ensure quality control during construction.

It was a natural extension of the above for Civil & Civic to then market itself as a Project Manager to external clients, taking full and undivided responsibility for the execution of all phases of projects, from inception to completion. This move was initiated in 1958. Market penetration of what came to be described as our "project management services" (PMS) was initially slow, but had become very substantial by the mid-60s.

Project governance by individual Project Control Groups (PCGs) was formally introduced in 1963. Further penetration into the "front end" of projects was formalised in 1965 via what we

called “client needs determination” (CND), which involved helping the client ascertain his real needs (be they business, educational, or what have you), so that the project needed to help satisfy these needs could be more accurately specified.

With the addition of CND we felt that we were now offering a really comprehensive project management service. Customers evidently thought so too, as demand for Civil & Civic’s PMS accelerated rapidly from the mid 1960s.

All this happened absolutely independently of corresponding developments in project management overseas. The only project-related material we became aware of was the development of the Critical Path Method and PERT in the USA, which was destined to impact substantially on Civil & Civic.

**PMWT:**        *Can you tell us about your involvement with this?*

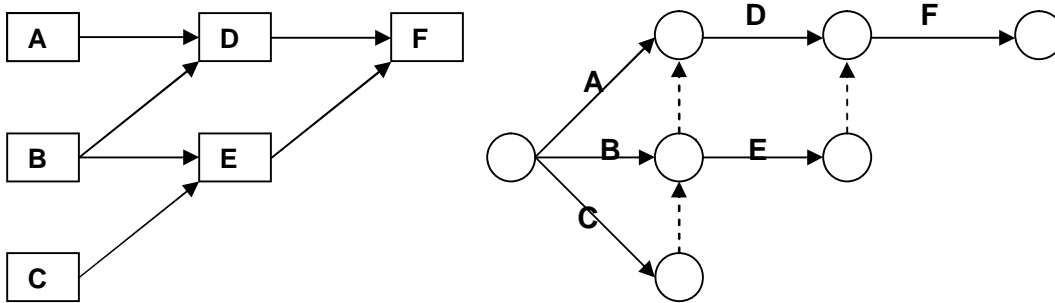
**Stretton:**     Because of some prior experience in construction planning, I was appointed Planning Manager of Civil & Civic soon after joining the company, with a main-stream task of getting construction planning fully developed and installed throughout C&C. Fortunately for me, both the Critical Path Method (CPM) and PERT had recently been developed in the USA, and everyone in Civil & Civic wanted to know about them, so I had a potentially ready-made tool to further help promote planning as an integral part of project construction management. In early 1962 a new employee who had been involved with CPM with Bechtel showed us how to develop and use arrow diagrams, so I initiated an educational and hands-on program to develop arrow diagrams for an increasing number of the company's building construction projects.

In a parallel development, a copy of Fondahl's pioneering report of 1961, "A Non-Computer Approach to the Critical Path Method for the Construction Industry" was obtained in October 1962, and immediately began to be used by planners in Civil & Civic's design department. They had to plan and monitor a large number of projects in the design stage in a rather dynamic environment, and found precedence networks easier to work with than arrow diagrams.

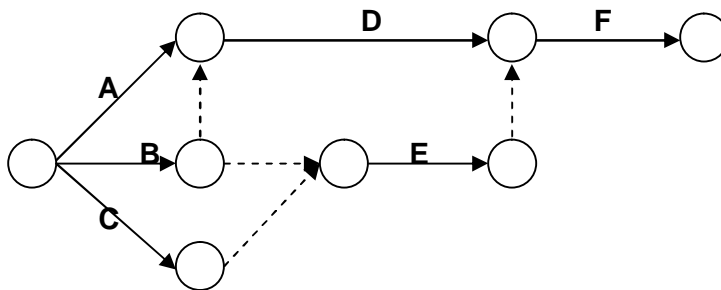
In the meantime, we continued to use arrow diagrams on construction projects into 1963, but not always successfully. One of the problems was that many of the construction site managers did not find it easy to embrace "ownership" of CPM arrow diagrams as a primary planning tool. More importantly was an increasing awareness of errors in the network logic due to the "double dummy" problem. Fondahl's method (which came to be called the Precedence Diagramming Method – PDM) was superior on both counts. We therefore shifted the whole organization to PDM in 1963, and it was in standard use by the end of that year.

**PMWT:**        *What was the double dummy problem?*

**Stretton:**     The double dummy problem is probably best explained by a simple example. On the left is a six-activity precedence network. On the right is a first attempt to draw the equivalent arrow network. It can be seen that the way the latter has been drawn now says that Activity D cannot start until Activity C has been completed - via the two dummy arrows - which is clearly invalid according to the precedence network. This is what I call the "double dummy" problem.



The standard way most of us used to correct this invalid linking is shown below. This involved the creation of another dummy arrow before the start of E, as indicated, which then avoids any unintended connection between the completion of C and the start of D. (It should also be remarked that, in practice, one would go on to eliminate the dummy between the finish of E and the start of F by direct connection; and likewise between the finish of C and the start of E).



But the main problem with real-life arrow diagrams is to identify instances when the double dummy problem has occurred. For large and/or complex networks, I found it virtually impossible to affirm that I had identified all such instances. This was a primary reason for my shifting to PDM.

**PMWT:** *What was happening with arrow diagrams and PDM in Australia at large?*

**Stretton:** With regard to PDM networks, Civil & Civic appeared to be the only substantial user of this form of network planning in Australia until around 1967. It is interesting to note that John Fondahl’s original 1961 report used circles as his activity nodes, and this was the notation we adopted in Civil & Civic. Yet, somewhere along the line, rectangles came to be used instead of circular nodes. I don’t know when this happened, and who initiated the rectangles, but I would certainly like to know. I first came across the rectangular notation in 1967, by which time it appeared to have already been adopted as standard for PDM.

The take-up of PDM in Australia appears to have been very substantial by the early 1970s. However, there was a notable exception with some government departments in Australia, who stuck with arrow diagrams right through the 1960s and 1970s, evidently because many of them had made substantial investments and commitments to arrow diagram computer

programs, which they were reluctant to abandon. We therefore had the rather absurd situation where contractors to these departments had to submit detailed arrow diagram networks, which for some, including Civil & Civic, meant duplicating their own PDM network with the corresponding arrow diagrammed network. I led a push to stop this absurdity, but without much success – but the PC and accompanying PDM packages eventually took over in the 1980s.

**PMWT:** *OK, now back to you and project management*

**Stretton:** In parallel with the development of Civil & Civic's "project management services" and the deployment of PDM throughout the company, in 1963 we started on a major general management education program (the L A Allen Profession of Management program) throughout all companies in the Lend Lease group, including Civil & Civic. I was heavily involved in this, and became its program manager in 1965.

Over the course of time it became increasingly evident that many of the general management principles we were discussing were not relevant to some of our work in a wholly projectised company – indeed some of the principles seemed counter-productive in the project context. (That is not to say that there were no benefits from this program – in fact, there were many, including the adoption of a common management language throughout company and the Lend Lease group, and for many, including myself, the recognition that I was first and foremost a manager). So I started asking the question as to what was particular to the management of projects, as opposed to general management.

There was very little relevant material in the literature at the time, and I virtually pounced on the first book on project management that came my way, which was Cleland & King's classic 1968 book "*Systems Analysis and Project Management*". Although very interesting in its own right, this book was a disappointment because most of its concerns did not appear to relate to our experience as a fully projectised organization in the Australian building and construction industry.

In the 1970s I read quite a few articles and papers on project management, but did not find anything that overviewed project management, and/or compared it with general management. In the meantime, I taught building project management at the University of New South Wales in evening classes for eight years, and was as the guest speaker at the first public meeting of the Project Managers Forum (the predecessor of the Australian Institute of Project Management) in Sydney in 1976. After this I became increasingly involved with many of their seminars, and started presenting and publishing papers to various other audiences.

Then, in 1979 came Kerzner's classic book "*Project Management: A systems approach to planning, scheduling and controlling*". His approach was somewhat more generalised than Cleland & King, but still did not provide the kind of general project management framework that jelled with my experience. But it did prompt me to develop my own version of distinctive features of project management, and to compare them with general management, in a paper published in 1983. This seems rather "old hat" now, but attracted some attention at the time.

**PMWT:** *How did you become involved with PMI and the PMBOK?*

**Stretton:** If I remember correctly, it started with the August 1986 issue of the Project Management Journal which included a draft Project Management Body of Knowledge (PMBOK). This was the first serious attempt I had seen to systematically codify current knowledge about project management.

This stimulated me to try and develop something that could lead “Towards a Theory of Project Management”. I used a contingency theory model, which equated project management with open, adaptive, organic organization types, as opposed to the closed, stable, mechanistic forms of more traditional management. I presented this paper to the National Conference of the Project Managers Forum in Adelaide in March, 1987. The paper itself did not lead to any new breakthrough, and certainly the idea of a theory of project management remains as elusive as ever.

However, the more significant thing that happened at this conference was my meeting with guest speaker Dr John Adams of the Project Management Institute (PMI), who was then Chairman of PMI's Standards Committee (and thence responsible for the PMBOK). This meeting stimulated my interest greatly, and not long afterwards I visited John at his home base at Western Carolina University (WCU), to find out more about the thinking behind the PMBOK.

Following our discussions, and some critical analysis of the PMBOK, I published an article in The Australian Project Manager (the Journal of the Project Managers Forum) in 1988 entitled "PMI's PMBOK: Can It Be Improved?" This quickly found its way to the PMI in the USA, and attracted some comment.

I then attended PMI's annual Seminar/ Symposium (S/S) in San Francisco in September 1988, where I spent a day in a workshop on the PMBOK, run by John Adams, from which I was allocated a couple of assignments. I produced a couple of papers for internal discussion in PMI, which evidently attracted some attention. Later, I summarised the results in an article in PMI's Project Management Journal in December, 1989, under the title “A Consolidation of the PMBOK Framework and Functional Components”.

In the meantime I attended PMI's next S/S at Atlanta in October 1989, and was persuaded by John Adams to toss my hat into the ring for the position of Chairman of the Standards Committee, which he was vacating (the Standards Committee being responsible for the further development of the PMBOK, amongst other things). Rather reluctantly, because of the problem of distance from Australia, I agreed to have my name put forward as a candidate. To my substantial surprise I was selected - the only non North American to be elected to this level of office in PMI to that point.

It turned out that my reservations about nominating for this position (because of the tyranny of distance) proved to be well founded. We initiated twelve separate projects in connection with upgrading the PMBOK, and in spite of my making four or five visits each year to the USA, I simply couldn't manage these projects effectively from Australia. The real work was being done by my deputies - initially (but for only a short period) by John Thatcher, and then by Bill Duncan.

But I must say that this was a very stimulating period, in which I learned a lot about how project management was practised in many and varied application areas, particularly in North America. I also formed close contacts with PMI's European counterpart, IPMA (formerly INTERNET), and attended several of their conferences and meetings.

Eventually, in January 1992, I was able to resign the position of Director of Standards in favour of Bill Duncan, who had been doing the lion's share of the work, and deserved to have the position. I remained on the Standards Committee, and contributed something initially. But the real leadership and integrating work was done by Bill, so that PMI was able to publish "A Guide to the Project Management Body of Knowledge" in 1996. This document adhered to the "functional" approach of earlier editions, and added a ninth function, the management of integration. But its treatment was wholly new, and it had a consistency lacking in the earlier versions.

**PMWT:** *What about your involvement with PMF/AIPM in Australia*

**Stretton:** As I've already said, the Project Managers Forum (PMF) was formed in 1976. Initially the PMF primarily acted as a forum for people to exchange experiences and opinions on network analysis techniques and the like, but it widened its horizons quite rapidly into broader aspects of project management in the 1980s. In addition to being the guest speaker at its inaugural public meeting, I participated in several discussion panels in this period.

In 1989, the Project Managers Forum changed its name to the Australian Institute of Project Management (AIPM), with a new constitution specifically concerned with pursuing professionalisation issues along the lines of the Institution of Engineers, Australia, and the Project Managers Association in the UK.

I became heavily involved with helping them develop their programs, but pulled out during 1992 when I felt I had probably made as much contribution as I could to that point. I have to confess that I was not over-enthusiastic about professionalisation as such, and the ways of implementation being considered. However, I contributed simply because I didn't have a better solution to the quality-of-service problem, and because of my rather unique position in the Australian project management scene. And I continued to represent AIPM as a sort of unofficial liaison person in my many visits to project management conferences and institutions in North America and Europe.

But about 18 months later I again became quite heavily involved with AIPM's professionalisation initiatives, after there had been a major shift of emphasis from knowledge based assessment of project managers to competency based assessment. AIPM began developing Competency Standards for project managers, following guidelines and procedures laid down by the Commonwealth Government, and supported by funding from both the government and industry. Initially I had taken little interest in the detailed development of these Competency Standards. However, the leading role played by the government was unique in the world, and it soon became apparent that the Australian Standards could well become a model for other countries to follow. At that point I became very interested, and injected myself back into AIPM affairs generally, and into the

development of the competency standards in particular, via the Industry Reference Group and its Core Working Group.

I was elected a Life Fellow of AIPM in 1996, but have not been active in its affairs in recent years.

**PMWT:** *What about your involvement in the MPM course at UTS?*

**Stretton:** I joined the newly created (out of the NSW Institute of Technology) University of Technology, Sydney, on 1 January 1988, specifically to develop and deliver a Master of Project Management course. I was helped in this by Hamish McClennan, a little later by Patrick Healy, and then by Lynn Crawford, who eventually took over the leadership of the UTS project management programs.

I had a strong conviction that describing an avocation by its functions, or by its tools and techniques, was not the most useful framework to educate people who essentially wanted an answer to the question, “I have just been given this project to manage. What steps so I now need to take to successfully progress the project, from start to finish, to achieve a successful outcome?”. We therefore based the course on a backbone of what we called the “project process”, which in more conventional terms would be described as the “project life cycle”.

We developed a series of generic processes for this, i.e. processes which would be applicable to most projects in most application areas. Discussion of the project management functions, and tools and techniques, were introduced at appropriate places in the project process. Live case studies comprising real clients with real problems/opportunities were introduced. Students formed into project teams, and on a rotating basis through the various phases of the project life cycle undertook the roles of project manager contractor, client, immediate downstream customer and the combined role of client and internal project manager, on a rotating basis.

The MPM course was essentially off-campus. Participants came together three times per year for a week’s intensive work each time.

This approach appeared to work particularly well, as students faced real-world project situations, and experienced them from different role perspectives. Later the course was modified to allow one-year and two-year courses, as well as the three-year masters course. From around 1997 my involvement with the UTS courses was mainly confined to a few guest appearances, although I remained on the books as an Adjunct Professor until 2006, and continued to write papers.

**PMWT:** *I know you currently have a strong interest in program management. How did this come about?*

**Stretton:** Around 2005 I became involved (through UTS) in trying to improve the quality of the English translation of Japan’s “A Guidebook of Project and Program Management for Enterprise Innovation” (P2M 2004). I chose their quite substantial section on Program Management, because I felt I knew little about the topic - a situation I was to become increasingly interested in remedying. I became familiar enough with the P2M material to ask

the question, “I wonder how the Japanese approach to program management compares with the Western approach?” The next question was, “What is the Western approach?” So, I started looking at the Western literature on program management.

It didn't take long to find out that there are many different understandings in the Western literature about the nature of programs and program management. As yet, no-one appears to have attempted a comprehensive overview of the Western approach, so this prompted me to undertake a journey into the program management literature myself.

To date, I have accumulated more questions than answers. So I am in the process of drafting some discussion papers, which I hope may stimulate interaction with people operating in various areas of program management, and perhaps answer some of these questions. Hopefully, *PM World Today* may be an appropriate medium for facilitating such discussions.

***PMWT:*** ***Thinking back over your career now, what was the single most interesting program or project that you worked on and why was it so interesting?***

**Stretton:** Probably my most interesting, and challenging, project was developing the Master of Project Management course at UTS. It is one thing to have practiced project management successfully, but it is quite another to try and capture on paper your own experiences, and those of so many other project managers operating in a variety of different application areas. It proved more difficult than I had expected to develop a generic set of processes that satisfied me and the other contributors to this development, and also to incorporate relevant materials from the literature. It was certainly a substantial learning process for all the contributors. Then came the ‘acid test’ of delivering the program to some forty mature-aged students with collective experiences totalling over 600 person-years. Both the deliverers and the students learned a great deal in trying to reconcile differing experiences in different contexts. Also of course this very much helped the ongoing course improvement program, and the personal development of all of us delivering the program. It was quite an experience!

***PMWT:*** ***What advice would you offer to young project managers just starting their own careers in this field?***

**Stretton:** Project management is part of a broader management regime, and may evolve in unexpected ways as the world changes. Keep a keen eye on the broader contexts in which both general management and project management are evolving, as this could give valuable insights about how to better contribute in future environments.

***PMWT:*** ***You were awarded an honorary PhD in Project and Program Management from ESC Lille in France in 2005. Can you tell us what that was for, and what that honor meant to you?***

**Stretton:** The citation focused on my contributions to project management over many years in various contexts, both in Australia and overseas. We have already discussed some of these contributions, and others are summarised in my biographical notes. What this honour meant for me was that I saw it as representing recognition by my peers, and it helped

motivate me (remember that I am now well into my eighties) to do further work on program management in particular, as already mentioned.



ESC PM Program Director Professor Christophe Bredillet, ESC Dean & General Manager Jean-Pierre Debourse, Alan Stretton receiving honorary PhD  
ESC Lille, Lille, France, August 2005

**Editor's note:** *We want to congratulate Alan and thank him for his many contributions to the field of project management, for taking the time to answer these questions, and for sharing some personal stories from his life in project management.*