

A long term view of project management – its past and its likely future

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INTRODUCTION

Projects have been managed for as long as there have been projects. There have been projects for as long as groups of people have set out to achieve things – which is longer than recorded history - millions and millions of projects stretching back over thousands of years.

Only in the last thirty years has project management been recognised as a science which could be defined, learnt and widely applied. Being newly recognised, the science was also developed quickly during that time. Like any other applied science, people will continue to develop it so long as it remains useful. And also, like any useful applied science, project management will be applied more and more widely over time.

In this paper, I review the past of project management and suggest how its future might evolve. Can its current energy be maintained? Will its impact increase or decrease as the new century unfolds? Are we in a secure profession or is project management just a rather long-lived management fad?

I use no diagrams or pictures. I do not just want you all to listen to what I say. I want you to think about the future with me.

THE PAST AND THE FUTURE OF WHAT?

The term 'project management' is only thirty years old. Before it was invented, many projects were managed but nobody had identified that they needed a distinctive management process, still less had they decided what that process should be.

Many more projects were managed before modern 'Project Management' was developed than have been managed with its help since it was developed. And even today, there are certainly more projects being managed with no help from the science than with it. Its influence up to now, therefore, has been very small and its potential influence in the future is huge.

This point depends upon using a broad definition of a project. My preferred definition of a project is that it is a series of activities undertaken by a group of people which is intended to achieve a result.

By this definition all construction activities are projects as are all research activities, all product developments and all one-off engineering activities. But in addition to these 'traditional' project management sectors, it also includes all military activities, all government initiatives, all business initiatives, all legal cases, all arts, television and radio productions, all big social events and all premeditated crimes. Indeed, it includes all deliberate creations of things and deliberate changes to things undertaken by groups of people. In this wider definition, 'things' does not mean only physical

things like buildings and new products – it also means non-physical ‘things’ like winning an election or a court case, like merging two businesses or merging two people in marriage, like introducing the single European currency and like introducing the market economy into a former communist country.

Another definition of a project which I like and use often is that it is getting from State A to State B. State A is some aspect of the state we are in now. State B is that aspect changed. State A is these two companies not merged, State B is them merged and working well as one. State A is the company manufacturing a product in an old and inefficient factory, State B is it being done efficiently in a new one. State A is our company not having a product in a market sector, State B is our company having a product in this sector. State A is traffic congestion around the city of Birmingham, State B is new relief road built and in use. State A was my being unmarried, State B was my being married to a beautiful, intelligent woman who loved me. This project was completed on 23rd February 1963.

State B is always seen as better than State A by the people who initiate the project. Sometimes their state B is definitely not better for another group of people. Crimes and wars are examples of such projects. The attack on the office buildings in New York city was a project for which, incredibly, those who planned it believed State B to be better than State A.

Another definition point which makes production of statistics about the past and the future of project management dubious is the uncertainty of where one project stops and another begins.

A few years ago, I made a grand but simple statement of the type which either takes hold and lives or dies that day. This one, that all projects are somebody else’s sub-project, seems to have taken hold and lived. That the statement is very occasionally not true seems not to have held back its acceptance.

It seems true for most projects of the types with which we at this congress are concerned. Every battle is a sub-project to a war. Every project carried out for a commercial organisation is a sub-project to that of achieving its corporate goals. Every project for a democratic government is a sub-project to the project of securing re-election next time. Every project we undertake as individual people is a sub-project to the project of securing our own happiness – whether short, medium or long term.

Very often, in the present extent of application of project management, you will find that it is not being applied to the project of which yours is a sub-project – your super project. Less often but quite commonly, project management is not being applied to many of the sub-projects which make up yours. Bad management of your super project makes for imprecise objectives for your project and poor decision making by your client. Bad management of your subprojects makes for poor performance of your project. You cannot win if the members of your team of contractors and suppliers are not well managed.

THE PAST AND THE FUTURE

If we ignore human activity more than a thousand years ago (which in those parts of the world with ancient civilisations is unjustified) it is reasonable to assume that, over the last thousand years, the total number of projects has increased slowly as life slowly became more diverse and complicated. For example, life in Europe was not noticeably more complicated at the end of the eighteenth century than at the end of the seventeenth. At the end of the twentieth it was hugely more complicated than it was at the end of the nineteenth. The rate of increase in the number of projects undertaken will have been much greater over the last two hundred years as social, scientific, technical and political developments were more influential and rapid than ever before. These developments continue apace now. Consequently, we may assume that the rate of growth of the number of projects in hand is still increasing.

The techniques which we now call project management have all been identified and developed over the last forty years. Collectively they are now a proper science, carried out by people who know how to apply it. It is a science in that it can link cause and effect, it can be taught and learnt, its characteristics

can be described and measured and it is amenable to research conducted with full scientific rigour.

In some sectors of human activity, modern project management science is applied on a significant proportion of the projects. These can already be called the 'traditional' application sectors such as construction, IT, manufacturing and engineering. However, at most we might guess that one third of all projects in these sectors use modern project management. Its use in other sectors is tiny although growing fast.

To foresee the future we know nothing better than to project recent trends. The proportion of the world's population who could apply modern project management in 1960 was zero, it has increased ever since and we project that it will continue to increase.

One thing long-term forecasters have learnt is that trends are not a reliable basis of long term forecasting. There is always some shift in the activity or its influencing surroundings which deflects or terminates the trend. For example, at an IPMA meeting soon after the Berlin Wall came down, the representative from Eastern Germany pointed out that the number of people who were members of the newly established East German project management association had increased in the last year whilst the population of the country had gone down. He projected these trends and showed on a graph that, in not so many years, all the population of East Germany would be project managers and members of the Association.

If we project forward from the growth of project management over the past forty years, its modern period of history, we can expect it to grow hugely until a shift deflects or terminates the trend.

Suppose, and we cannot know the real figures, modern project management is now applied to only one third of the projects in its now accepted areas of application. Suppose also that there are ten times the number of areas of application than those where it is now applied. Suppose that the rate of growth of the number of projects being undertaken in the areas of the world where they are established is that they double every ten years. Suppose that the number of areas of the world where this is true doubles every twenty years (the number of less developed countries becoming developed). And suppose, finally, that in twenty years time, due to the inevitable inertia of human systems, project management has only achieved half its possible volume of application.

The forecast volume of modern project management activity would be the present volume $\times 3 \times 10 \times 4 \times 2 \times 0.5 = 120$ times. In twenty years there will be 120 project managers for every one there is now. This forecast must be wrong, as it is comes from multiplying five dubious forecasts together. But it might be of the right order of magnitude. History tells us that projecting trends further than twenty years is usually wrong – after that time a shift does deflect or terminate the trend.

What other trends might we use to forecast? Two in particular are very clear. The science of project management is both changing fast and developing fast and can be expected to continue to do both.

It is changing in that every year it becomes more concerned with managing the interactions of people (unhelpfully called the soft techniques) and less with the production of documents and the processing of numbers (unhelpfully called the hard techniques). This trend has been apparent ever since modern project management began thirty years ago. Look at the topics of the papers being delivered at this congress. The hard techniques are hardly mentioned. Compare this with the first congress in this series which I attended (the second ever held - in Stockholm in 1972) - the soft techniques were not mentioned at all. They did not exist and nobody even imagined their existence. In 1972 we discussed project planning by network analysis and nothing else. Many of you may not know that this organisation, IPMA, was first called Internet - meaning the international network analysis organisation. Only after another even more rapidly growing and widely applied piece of science stole our name did we adopt a new one.

For some years afterwards the science developed only by bolting more things onto network analysis (resource levelling, for example) and doing it using better computer programmes. The science was quite seriously mathematical in those early days. Resource levelling, incidentally, and the algorithms for

doing it, occupied some of the finest minds in the universities and the software writing companies for some years. But it never caught on with real project managers. Project management in this had the characteristic of many more mature sciences very early on – there were people pursuing an aspect of it because it fascinated them – their belief that it was also potentially useful being an illusion.

I think the change from the hard techniques to the soft has now become almost complete. Of course we still produce project programmes by computerised network analysis and the software improves all the time but few people now think that network analysis is at the cutting edge. Most of the numbers stuff is produced using spreadsheets and the words stuff by what we used to call ‘word processing’ software. This is not seen as part of project management science as it is also used in many more sectors of human activity. Perhaps the only area of project management where the hard techniques are still moving ahead is in the exchange of data via the internet and with the aid of modern information management technique. These will soon make the paperless project a reality.

Another important change, not yet complete, has been the change from the predictable model of project management to the unpredictable. In the early days we assumed that projects could be carried out in accordance with the original plan if the planning was good enough. We assumed that project clients would not change their minds about what they wanted. If they did, it messed up our projects and it was their fault. We tried to impose design freezes. We assumed that the client’s objectives, his organisation and his people would not change whilst we did their project. We assumed that our own objectives, organisation and people would not change. We did not do risk management because we had thought of everything and everything was predictable.

The rejection of this stable model has begun in project management but still has a way to go. I still find people who feel upset if we change the original plan and if the client changes his mind about his objectives. The unstable model says that a real project manager will change the plan whenever a better one for finishing the project can be established. A really good project manager will happily accommodate as many changes as the client wants in his objectives. It’s his project and he can do whatever the changes in his world dictate. Every project is somebody else’s sub-project. Our project is only a sub-project for him.

A project plan is a series of forecasts, all of which are likely to be wrong - some not so far wrong that it matters, but many quite a lot wrong. And every project will get its ration of unexpected problems. We must manage the risks effectively and expect our project to change. The unstable model is the real one.

The second trend – development - continues. Programme management, portfolio management, management by projects, change management and risk management, for example – all much discussed at this time and becoming more widely applied, are not new developments in project management but they are sectors of it which are certainly still developing. If you seek proof, look around you at the papers in this congress. At this congress there are developments of the science being presented which are new – things which were not on our lips in our discussions at the last congress in London two years ago. And some of the things which startled us then are accepted now.

The very rapid growth of interest in managing the interfaces within projects is a phenomenon of today which I predict will run further until it has run its course. It has led to project managers concerning themselves with contracts, with procurement and with supply chain management. These things apply particularly to the hard projects like engineering and construction where there is a physical end product. They are also increasingly being thought about in the context of the soft projects where there is no physical result. In this context, I include IT projects and systems projects generally as hard projects. Although you cannot see, bump into or fall over the end result, it is physical in every other sense.

In earlier times we managed all these interfaces as if the group of people on the other side were like a sports team which we regarded as our rivals and which we were determined to beat in the game. This we now call ‘adversarial’. In simpler language, perhaps an exaggeration, we thought of them as the enemy. Modern project management culture says we must think of all the other organisations involved

as allies, working towards achievement of the common goal – project success. The adversarial approach is so deeply rooted that many people still find it hard to change to the new culture. I foresee that quite soon the adversaries will have all gone – converted, retired or died.

In many countries this new approach has caught fire and is sweeping through the dried-up undergrowth of confrontational commercial relationships. A great pleasure to me personally is that this change, in the hard projects sector, is often catalysed by the use of the New Engineering Contract – a development in the applied science of project management which it was my privilege to lead.

Why did it take so long to make this particular step forward? How did we tolerate a culture which put each contributor to a project fighting the contributor who had hired him or her and, on the other side, all the other contributors they had hired? Was it likely that the ultimate client would achieve his project objectives if all the other contributors, at all their interfaces with others, were trying to achieve their own, different objectives? The typical contractor (contributor) carrying out a sub-project was motivated to achieve the objectives of his own super project, not of his client's super project.

Once an alternative to this culture of combat had been identified, it was adopted fast and it will quite soon be universal. The adoption of things like partnering and alliancing could well be the change in project management which, in the whole history of the science, takes the shortest time from first concept to full implementation. As we are in the middle of this revolution now, it must rank as a medium term transition from the past to the future.

WHAT IS SCIENCE ANYWAY?

In forecasting the long-term future of project management, we must ask two things.

Firstly, what is the nature of what will remain a part of the science? It is not only what people managing projects effectively find helpful, it is what remains sufficiently novel and difficult that only they can do it. I doubt, for example, whether the ability to draw up a network-based programme on a computer will remain a part of project management technique and professionalism for much longer. Once every reasonably intelligent manager can do it, why would anybody use a specialist for the task and why would a specialist claim it as part of his skill? The bodies of knowledge we now use will change with time. Just as every cell in the human body is replaced every seven years, so we may expect that every component of the project management body of knowledge has a quite short life before it becomes redundant and is replaced by something else.

As another example, when a rational and simple method of decision making within project teams has been established and become widely used - incorporating, as it must, risk based consideration of the issues involved in each case - might decision-making and risk management lose their places in the science and be seen just as 'the way we do things'? Is there a period during which a new thing is regarded as part of the science and after which, if it has become generally used, it sinks below the surface of the great mass on common knowledge"

Secondly, we must ask whether project management is a sufficiently comprehensive, distinctive and purposeful set of techniques to secure its survival in the long term. After all, most other innovations in management science in the last fifty years have been through a cycle of development, application, and decay. In most cases the decay has been almost complete. Why should project management be the only innovation in management science to remain for all time? The American management scientist Richard Pascale has produced a striking analysis of the growth and decay of all these other things. Of the 34 important new management approaches and techniques invented since 1960, only 15 were still in use at all by 1995. Their life from invention, through peak use to disappearance, was seldom more than ten years.

My forecast is that project management will survive in the long term for two reasons. It is essentially simple and it is capable of extremely wide application.

I say it is simple because I have observed that it is. If you ask successful project managers the secret of their success they can all identify three or four key aspects of the science which they believe are more important than the total of everything else. They would agree with the proposition that most of the knowledge listed in the published bodies of knowledge for project managers is peripheral. I also know from experience over many years and from dealing with many people, that you can set a person on the path to becoming a good project manager with a training experience lasting no longer than a week.

I say project management is capable of wide application and I do not expect to be contradicted by any delegate to this congress. My own way of expressing this point derives from my definition of project management given earlier. Project management is managing how to get from State A to State B quickly, cheaply and effectively. It is the management of change. All the rest of management must be the management of no change – management of the status quo. The classical management control loop is aimed at just this, restoring the behaviour of a system to the stable desired state. But in the volatile modern commercial world, there is no stable desired state. The directors of all modern commercial enterprises are in the business of identifying the changes which they should make in order to remain competitive in a changing environment. They must change to keep their products better than their rivals, they must react to a changing market, to a changing regulatory regime, to changing technology, to a changing physical environment, to globalisation, to the information revolution, etc., etc. No successful business has been using the classical control loop for years. Successful businesses – all successful businesses - are now run by people whose skill is identifying beneficial change and then implementing it. This is no more than project management and no less. We are all project managers now.

This point applies equally to non-commercial enterprises. When Mr Blair's government in the U.K. was re-elected one year ago this week, his message after his victory was that his second term of office would be characterised by implementation. They had selected the changes they wanted to make during their first term, now they had the projects to be managed. Every project is somebody else's sub-project.

Project management skill in the future will not be confined to particular companies or particular industries, it will be the way most human enterprises work. The amount of change which an organisation has to undertake to stay alive is a function of the amount of change going on around them. The quantity and pace of change in the world and every part of it has been accelerating for the last two hundred years and there is no evidence that this acceleration will reduce in the next two hundred years.

We enthusiasts for project management have a choice. We can already manage projects well – not always, but we know how to do it. One route is for us to let the science stabilise and to concentrate on broadening its range of application – applying currently defined best practice. The other route is development of the science itself letting its application go where it will.

Choosing the first route is likely to lead to the end of project management. Once everybody is doing it, knows how to do it and does it without thinking, it will be like breathing. In the very early days of cars, they were only driven by trained drivers who did nothing else. In the very early days of computers, they were only operated by trained operators who did nothing else. Now everybody drives a car and everybody operates a computer.

CONCLUSION

So if we want to maintain a profession of project managers in the future, we must make sure that the science keeps on developing. Best practice must always contain some really useful new things as will assuredly contain no old things. By 'old' things I mean things more than say ten years old. The old things will have sunk into the basic skills of all managers if not of all educated people. It is not a new idea that project management should be taught in schools from infancy. When that happens, everybody will have the basic skills. The only things which will sustain the profession will be useful novelties.

So what is the justification for the continuation of a profession of project management which we can

offer to the wider community? It might be that if there is not an elite which is developing the science and applying its new tools, the underlying older science being taught in schools and practised by the masses will itself decay. If you see no logic in that, what is your justification? I do not find it very convincing.

I do not need to end on a depressing note. The basic facts are that we have developed modern project management over the last thirty years into an applied science which is hugely helpful to the achievement of the goals which groups of human beings set themselves. That it is still developing and is still being applied in new areas of human activity make it a very exciting profession to be in. That we can foresee continuing development and ever widening areas of application means that this excitement (and employment) will continue and almost certainly last longer than anybody in this room.

The great French writer and philosopher Voltaire said many wise things. He said that there was one power greater than the power of all the armies – that was the power of an idea whose time had come. That, my friends, is where we are with project management.