

Series on Project Successes and Failures¹

Article 1 of 6

Some deficiencies in data on project successes and failures

By Alan Stretton

INTRODUCTION

Many people in the project management community are concerned about what has been happening in practice with project performance – e.g. about the current position with project successes and failures; whether project performance has actually been improving; and the extent to which our efforts over many decades have helped, or failed to, improve such performance. This is the first article of a series, which is initially concerned with the current position with project successes and failures, and later with approaches to increasing project success levels.

As is indicated in the title, this first article looks at some deficiencies in available data on project successes and failures. Two types of deficiencies are discussed. The first relates to substantial differences in criteria used by various people as to what constitutes project success and/or failure, and the frequent absence of any stated criteria. The second is that data on project success / failure rates are very sparse indeed. There is partial coverage of two application areas, namely software development projects and mega-projects, but next-to-nothing on other project management application areas. Finally, a “levels of success” model is introduced, which adds another dimension to success / failure criteria, and will feature prominently in some later articles in this series.

VARYING CRITERIA USED FOR SUCCESS / FAILURE

The best discussions I have found on variations in criteria being used to establish project success / failure are by Dalcher 2014, who discusses this complex subject at length under the headings “Beyond simple success measures”, and “Rethinking project success”. I will not attempt to summarize the many issues he covers, but discuss those which appear to be most relevant to this series of articles.

Shortly we will be looking at some success / failure data on software projects. As will be seen, the majority of the cases discussed by Dalcher define success as meeting all the criteria associated with the budget, schedule and functionality – i.e. “project management” success. Further, failure is defined as not meeting all of the same criteria.

¹ This series of articles on project successes and failures is by Alan Stretton, PhD (Hon), Life Fellow of AIPM (Australia), a pioneer in the field of professional project management and one of the most widely recognized voices in the practice of program and project management. Long retired, Alan is still accepting some of the most challenging research and writing assignments; he is a frequent contributor to the **PM World Journal**. See his author profile at the end of the article.

This approach sees the relationship between success and failure as a binary function – the project is either successful, or not. As Dalcher then observes,

In an attempt to make further sense of the relative positions of success and failure, software surveys have found it useful to introduce the idea of partial failure (or challenged projects) as an intermediate position between success and failure, potentially indicating dissatisfaction with a two state explanation.

This is the position taken in the Standish Group surveys, for example.

In sharp contrast with the above, it will be seen that a key figure in analysing mega-project successes and failures, IPA president Ed Merrow, uses criteria which are very different from any of the above criteria. Finally, in some instances to be discussed, no mention is made of any success / failure criteria.

There is rather obviously a strong need to establish and agree on success and failure criteria across the majority of project types and application areas, if we are to succeed in developing meaningful data on success / failure rates on projects at large.

SUCCESS/FAILURE RATES ON PROJECTS, AND CRITERIA USED

Success/failure rates on software projects

I found more published data on software projects than on any other project grouping. The data in Figure 1-1 derive from Dalcher 2014 (but it is noted that the Standish Group data are also available from other sources, including Morris 2013).

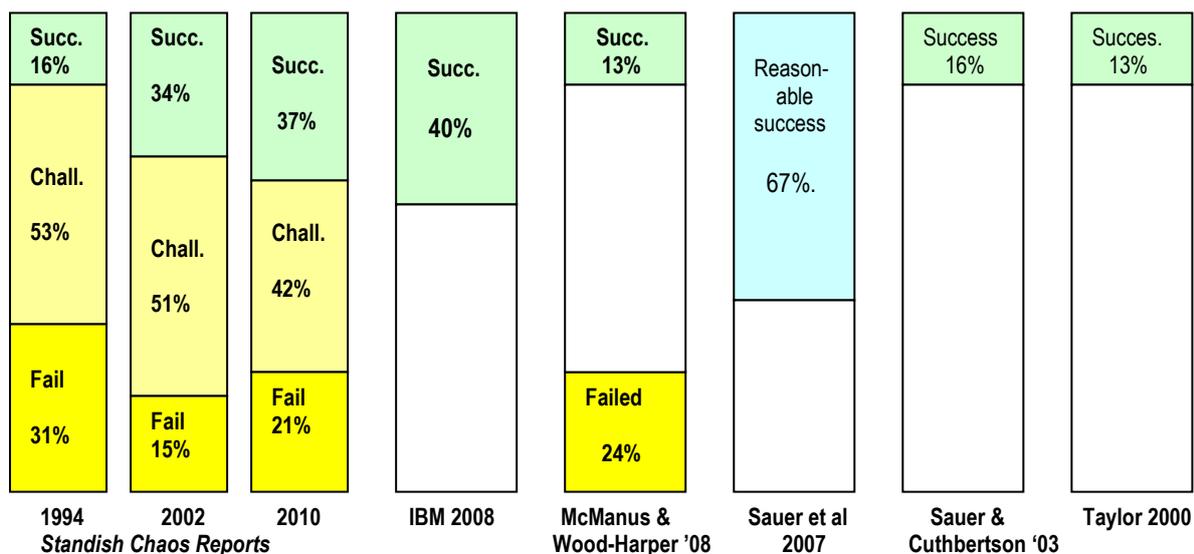


Figure 1-1: Some success/failure rates on software projects

Success/failure criteria used on these software projects

The Standish, IBM and McManus & Wood-Hooper examples above use essentially the same criteria for success and failure as described immediately here-under. (These are indicated in bold type in the above figure). Standish's "challenged" criterion is also defined. These criteria are described by Dalcher 2014 as follows:

- Successful: Projects completed on time, within budget, with all specified features
- Challenged: Completed and operational projects which are over budget, late, and with fewer features and functions than initially specified.
- Failed: Cancelled prior to completion, never implemented, or scrapped following installation.

Dalcher 2014 notes that Sauer et al 2007 say that 67% of the projects they surveyed were delivered close to budget, schedule and scope expectations. These are labeled as "Reasonably Successful" in the above figure. It seems natural to associate them with a combination of successful and 'challenged' in the Standish categorization, but there are no data which would enable one to establish any one-to-one relationship.

The success criteria used for the remaining two are not specified. However, their success percentages correspond quite closely with the McManus & Wood-Hooper figures, whose criteria were specified, so perhaps they could be seen as indicative.

Comment on validity of the Standish findings

Both Morris 2013 and Dalcher 2014 note that the research approach used by the Standish Group has been challenged over the methodology used, and the rigour of analysis. However, as Dalcher notes,

....the figures provide a well-referenced baseline related to the extent of software project failures. Other studies appear to confirm the high failure rates.

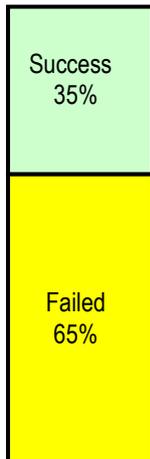
I am not over-concerned about challenges to the Standish Group figures. The main point is that the failure rates in Figure 1-1 are high, and the success rates low. The industry's recognition of, and its evident concern with, these unsatisfactory performance data, are reflected in Jones 2010, as follows:

The software industry has the highest failure rate of any so called engineering fields. An occupation that runs late on more than 75% of projects and cancels as many as 35% of larger projects is not a true engineering discipline.

Success/failure rates on mega-projects

Ed Merrow, President of research firm Independent Project Analysis (IPA) is widely regarded as having the most comprehensive data on successes and failures on mega-projects – i.e. projects which are (very broadly) valued at over \$1 billion.

The success / failure data illustrated in Figure 1-2 were quoted by Klaver 2012, from a Merrow presentation.



The success / failure criteria used by Merrow are quite different from those discussed above. Signs that a project has failed, as spelt out by Merrow, and reported by Klaver 2012, are:

1. Costs overrun by more than 25%
2. Schedule slips by more than 25%
3. Budget overspent by more than 25%
4. Execution time more than 50% over originally planned
5. There are severe and continuing operational problems into yr. 2 of project delivery

Merrow's data are widely acknowledged as being authoritative. and do not appear to have been challenged. Therefore, it is reasonable to assume that his data reflect the success / failure position with mega-projects reasonably well.

Figure 1-2:
Mega-projects

Merrow's failure criteria are a good deal less stringent than the others discussed above. None-the-less, which-ever criteria are used, it is widely acknowledged that mega-projects have a poor success record.

Success/failure rates on some other project types

The following figure illustrates success/failure rates on some other projects types, mainly R&D projects and major projects.

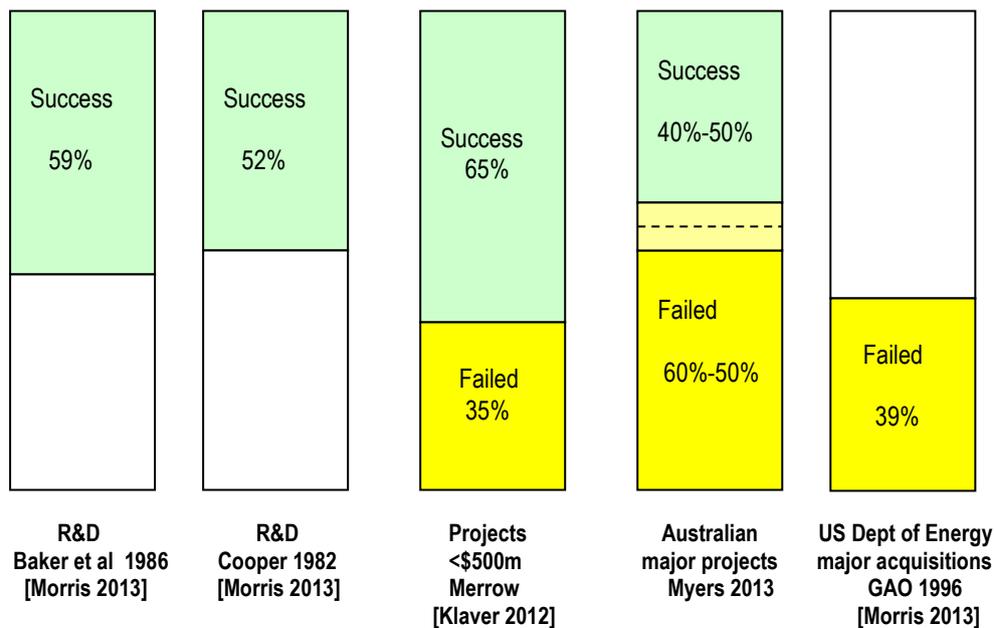


Figure 1-3: Success / failure rates on some "other project" types

Success / failure criteria used in some “other project” types

- *R&D projects;*
- *Projects < \$500m;*
- *Australian major projects*
No success/failure criteria specified

- *US Department of Energy projects*
The failure criterion used here is that 31 of DoE’s 80 major system acquisitions between 1980 and 1996 were terminated prior to completion. This therefore aligns with the Standish definition of project failure.

These were the only ‘other project types’ I could find which have success / failure data of any kind. As can be seen, they represent only a small fraction of all the many project types or application areas. Therefore they could not possibly claim to be in any way representative of “other projects” at large.

Clearly, we need much more data on successes and failures across the widest possible range of project types and application areas, if we are to achieve a clear picture of where project management stands in this regard.

ANOTHER ASPECT OF SUCCESS / FAILURE CRITERIA

Success for whom, and/or at what level?

Large projects, in particular, have many customers and stakeholders, who may, and often do, have quite different perceptions about whether a project has been successful or not. As Dalcher 2014 observes,

....., it may be possible to maximize the traditional criteria [i.e. seen as successful by the project manager], and yet deliver a product that is not valued by the users [i.e. seen as unsuccessful by the customers]. Likewise it is also possible to exceed the traditional criteria yet deliver a product that is valued and adopted by the user community, despite exceeding the budget or the schedule, or both.

The Sydney Opera House would appear to be a good example of the latter. It spectacularly failed on the last two criteria, yet the building became an icon, attracting tourists from all over the world, and thence also benefiting the entire city.

Additionally, the building was regarded as not fit for purpose. Yet, in spite of the attendant difficulties in staging operas, Opera Australia consistently delivers high levels of satisfaction to its many thousands of opera-going customers (who include my wife and myself).

This suggests that a model which caters for different levels of perception of project success / failure in broader contexts would be a useful addition to any discussion on success / failure criteria. Three different writers have proposed broadly equivalent “Levels of success” classifications, as now discussed.

Levels of success

Cooke-Davies 2004 discussed levels of project success, and proposed a three-level model, as follows:

1. Project management success - Was the project done right?
2. Project success - Was the right project done?
3. Consistent project success - Were the right projects done right, time after time?

Morris 2013:119 has essentially the same three levels of success, but with different descriptors, namely:

1. The technical core
2. The strategic envelope
3. The institutional context

Dalcher 2014 also adopts essentially the same three levels of success, and adds a fourth level, “Future potential”, where the focus is on new markets etc:

- | | |
|---------------------------------------|--------------------------------------|
| Level 1: “Project management” success | - Efficiency and performance |
| Level 2: “Project” success | - Objectives, benefits, stakeholders |
| Level 3: “Business” success | - Value creation and delivery |
| Level 4: “Future potential” | - New markets, skills, opportunities |

I will stick with the first three levels, which are shared by all three authors. (“Future potential” appears to me to still belong in the Level 3: “Business success” category, albeit in a longer-term sense).

In the following I will use Cooke-Davies’ and Dalcher’s descriptors for Levels 1 & 2, and Dalcher’s for Level 3, because I think the latter more appropriate for the purposes of these articles.

Level 1: “Project management” success

Was the project done right? (Cooke-Davies 2004)

Traditionally, project management success has been associated with achieving prescribed cost, time and quality/scope/performance objectives. As Morris 2013:118 says:

Level 1, the technical core, is pre-eminently delivery oriented. It is concerned with the management of the project's technical operations: writing code, testing, designing, building, fabricating, and, in project management terms, with scope, schedule, and cost planning and monitoring. The key concern is how to deliver projects efficiently: ... "on time, in budget, to scope".

This has long been a familiar theme in the project management literature. It reflects a perception of project management as referring "only to the management of project execution (after requirements have been identified)", as Morris 2013:235 describes it. This execution-only perception of project management is still wide-spread in the community at large, in business enterprise in general, and is also to a significant extent in the project management community itself.

Level 2: "Project" success

Was the right project done? (Cooke-Davies 2004)

As noted above, Morris 2013:118 calls this the strategic level, and says:

The importance of getting the front-end right is a major part of the strategic level.

In Morris' Figure 8.1 (p. 119), he describes Level 2 in a project life cycle context by adding two phases – "concept" and "feasibility" – to the front end of the three phases he used to describe Level 1 ("design, build, commission").

Making sure the "right project" is done evidently involves getting the concept right, and indicates the need for getting such initiating activities as accurate customer needs determination and project requirements determination right, before going on to feasibility studies and project definition. Morris 2013:235 broadly encompasses these activities under the descriptor "development management".

Elsewhere, Morris 2013:167 points out that "project and program managers need to ensure that the right processes and practices are being followed with respect to technical definition and development ...". This is a familiar requirement for project-based organizations providing project management services to external customers.

Morris asks the broad question, "Who is best qualified to do development management". His answer is, "To me, it would seem best to extend project management to include this activity".

This reflects a broader perception of project management than the execution-only viewpoint. It is also my personal perspective, which is adopted in this series, as will be seen in later articles.

Level 3: “Business” success

Were the right projects being done right, time after time? (Cooke-Davies 2004)

As I see it, “Business” success directly relates to the achievement of organizational strategic objectives, which is done via strategy formulation, strategic planning, and implementation of strategic plans via strategic portfolios of programs and projects.

Morris 2013 calls Level 3 the institutional context. He notes (p.119) that Morris & Geraldi 2011 observe that

Management here is concerned with the long-term p.m. health of the organization.

Dalcher 2014 says that

The outcome of the project contributes to business success through the satisfaction of business objectives that have been realized. Success equates to maximization of financial and business efficiency measures, such as sales, profits or ROI as well as delivered value measures.

In this context, we have moved from considering individual “project” success to that of multiple projects / programs within strategic business portfolios. This is a major escalation in the scope of addressing project success / failure, and again invites the question as to who is best qualified to do this work.

In the project-based organizations in which I have worked, project managers do all the strategic planning and management work. I had many years of direct involvement with this work in Lend Lease, and will be advocating wider adoption of project management involvement in these areas in the fifth article of this series.

These three levels of success will become increasingly relevant to later discussions.

SUMMARY/CONCLUSIONS

Several different types of project success / failure criteria are currently in use

It was noted that several quite different criteria (and lack thereof) are currently used for assessing success and failures in the project context. Some of these criteria were spelt out in more detail in following sections. These showed published success / failure rates on software projects and mega-projects, which appear to be at least partly representative, plus an odd batch of other projects which are clearly not at all representative.

It was concluded that there is a strong need for the project management community to establish consistent and widely accepted criteria for determining what constitutes project success and/or failure across most, if not all, project types and application areas.

Data on project success / failure rates are currently very sparse

This article first looked at success/failure rates on software projects, for which there are some data available. Although different criteria have been used in assessing successes and failures, the software sector itself is very concerned that its success rates are a good deal lower than it believes they should be.

Similar observations also apply to mega-projects. The data here are substantial, and success rates widely acknowledged as sub-standard. The data on both software and mega-projects tend to confirm that success rates tend to be lower for larger and/or longer-duration projects.

The data on success / failure rates on project types other than software and mega-projects are sparse indeed. Most of the other project management application areas are not represented at all. Why is this so? It appears reasonable to suggest that, when projects fail, there is little benefit for those involved to have such failures registered, let alone publicized. Indeed, this is often a time of high stress, acrimony and blame. Further, things are often complicated by changes in personnel when projects start going wrong. So, project failures tend to be swept under the carpet, or otherwise dissipated.

It was concluded that there is a need for the project management community to assemble much more comprehensive data on project success / failure rates than currently exists, covering the widest possible range of project types and application areas

This is easier said than done. What seems to be needed is a focused effort by project researchers and practitioners, preferably on an organized global basis, if we are to assemble success/ failure data which cover most project types and project management application areas.

It is reasonable to expect that there are many more data on successes and failures in the project context than I have been able to access, and I would be most grateful to receive relevant data from others who are willing to share such information.

A “levels of success” model was proposed, catering for three different levels of perception of project success/failure in broader contexts

Addressing the question, “Success for whom, and/or at what level?”, a proposed “levels of success” model for projects was derived from the literature. These three levels are described as:

- “Project management” success (“doing the project right”),
- “Project” success (“doing the right project”), and
- “Business” success (“doing the right project right, time after time”)

This three-level model of success in the project context will be used extensively in later articles in this series.

The next article in this series

This article has focused on success / failure criteria, and success / failure rates. In addition to sorting these out, we will also need comprehensive data on why projects have failed, if we are going to improve success rates in the future. This would appear to be a natural extension of research efforts to establish project success/ failure rates. The small amount of such data currently available will be examined in the second article of this series.

ACKNOWLEDGEMENT

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Alan Stretton is one of the pioneers of modern project management. He is currently a member of the Faculty Corps for the University of Management & Technology (UMT), USA. In 2006 he retired from a position 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. Prior to joining UTS, Mr. Stretton worked in the building and construction industries in Australia, New Zealand and the USA for some 38 years, which included the project management of construction, R&D, introduction of information and control systems, internal management education programs and organizational change projects. He has degrees in Civil Engineering (BE, Tasmania) and Mathematics (MA, Oxford), and an honorary PhD in strategy, programme and project management (ESC, Lille, France). Alan was Chairman of the Standards (PMBOK) Committee of the Project Management Institute (PMI®) from late 1989 to early 1992. He held a similar position with the Australian Institute of Project Management (AIPM), and was elected a Life Fellow of AIPM in 1996. He was a member of the Core Working Group in the development of the Australian National Competency Standards for Project Management. He has published over 140 professional articles and papers. Alan can be contacted at alanailene@bigpond.com.au.

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