

## Project Size and Categorisation

The ability to efficiently manage new projects is directly affected by an organization's ability to remember past successes and learn from past challenges<sup>1</sup>. This requires a logical, organised categorisation process for both projects and programs<sup>2</sup>.

A classification system should consider both the type of project and its inherent degree of difficulty measured along four dimensions.

### The Four Dimensions of a project

There are four basic dimensions to every project:

- Its inherent size usually measured in terms of value;
- The degree of technical difficulty in creating the output (complication) caused by the characteristics of the project's work and its deliverables;
- The degree of uncertainty involved in the project; and
- The complexity of the relationships ('small p' politics) both within the project team and surrounding the project.

The difference between how complicated the work is and complexity is that managing complicated work (ie, work with a high level of technical difficulty) is achievable by implementing appropriate systems such as quality management and configuration management. The consequences of technical difficulty are definable, predictable and manageable with the right people. The essence of complexity is that the future of any relationship is inherently unpredictable.

Whilst all of these factors impact on the degree of difficulty associated with successfully managing the delivery of the project, the Project Manager can only significantly influence, as opposed to manage, the last two elements. Reducing the degree of uncertainty and enhancing the relationships with and between project stakeholders (including the project team)<sup>3</sup>.

One should also note there is a significant difference between a program and a project and the associated skill set required by their respective managers. These issues are discussed in *Understanding Programs and Projects - There is a difference!*<sup>4</sup>

### Project Size

The size of the project or program will impact the degree of difficulty in achieving its objectives but large projects are not necessarily complicated or complex. There are projects in Australia to shift millions of cubic meters of overburden from mine sites with expenditures rising to several \$million per day but the work is inherently simple (excavating, trucking and dumping dirt), and the relationships in and around the project are relatively straight forward; the management challenges are essentially in the area of logistics. One only has to contrast this type of mega project with the difficulties of successfully delivering a small culture change

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<sup>1</sup> For more on **Lessons Learned** see: [http://www.mosaicprojects.com.au/WhitePapers/WP1004\\_Lessons\\_Learned.pdf](http://www.mosaicprojects.com.au/WhitePapers/WP1004_Lessons_Learned.pdf)

<sup>2</sup> For more on **program typology** see: [http://www.mosaicprojects.com.au/WhitePapers/WP1022\\_Program\\_Typology.pdf](http://www.mosaicprojects.com.au/WhitePapers/WP1022_Program_Typology.pdf)

<sup>3</sup> For more on **Stakeholder Management** see: <http://www.stakeholder-management.com>

<sup>4</sup> See: *Understanding Programs and Projects* - [http://www.mosaicprojects.com.au/Resources\\_Papers\\_078.html](http://www.mosaicprojects.com.au/Resources_Papers_078.html) and WP 1002 *Differentiating Programs from Projects*: [http://www.mosaicprojects.com.au/WhitePapers/WP1002\\_Programs.pdf](http://www.mosaicprojects.com.au/WhitePapers/WP1002_Programs.pdf)



within an established bureaucracy (say a new timesheet system) to appreciate size is only one dimension of a project.

### Technical Difficulty (degree of complication)

The technical difficulty associated with any project is a combination of the work needed to accomplish the project's objectives and the characteristics of the output (product, service or result) being produced<sup>5</sup>. It should be obvious that complicated *high tech* projects are inherently more difficult to manage than simple projects. The nature of the technical difficulties and the degree of certainty largely depend on how well understood the work is. *Bleeding edge* research has a far higher level of uncertainty associated with every aspect of its management than a project of similar technical difficulty that has been undertaken several times before. The degree of understanding of both the project's characteristics and the way they will be accomplished on the part of the project's client is as important to the success of the project as the understanding of the project team. The lower the levels of knowledge, the more difficult it is to achieve a successful project outcome that delivers the benefits expected by the client. This lack of knowledge will lead to:

- Less accurate estimates of activity duration, sequence and resource requirements;
- Less certainty the project scope contains 100% of the required work; and
- Greater needs for updates and modifications to the overall project plan to maintain relevance.

Paradoxically, the less that is known about the overall work of the project, with the associated reduction in accuracy, the more important project control tools such as the schedule become as a means for guiding the execution of the work and managing change.

### Uncertainty

The degree of uncertainty associated with the desired output from the team's endeavours has a major impact on the management of the project. This is different to the issues around *bleeding edge*, technically complicated projects discussed above. One measure of uncertainty developed by Eddie Obeng measures how much is known about what has to be achieved and how much is known about the methods of achieving the outcomes. The four options are detailed below.

When a bleeding edge project has a clearly defined end point you are on a *quest* the challenge is finding the optimum route to the end. When the end point is unclear you are either *making a movie* – the process are well known but the outcome is uncertain or on a *walk in the fog* where neither the route nor the outcome are defined<sup>6</sup>. This is not an issue as long as all of the project stakeholders appreciate they are on a journey to initially determine what success looks like, and then deliver the required outputs.

The less certain the client is of its requirements, the greater the uncertainty associated with delivering a successful project and the greater the effort required from the project team to work with the client to evolve a clear understanding of what's required for success. Budgets and timeframes are expected to change to achieve the optimum benefits for the client; and the project is set up with an appropriately high level of contingencies to deal with the uncertainty. Problems occur if the expectations around the project are couched in terms of achieving an 'on time, on budget' delivery when the output is not defined and the expected benefits are unclear<sup>7</sup>. Managing uncertainty is closely associated with and influences the complexity of the relationships discussed below.

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<sup>5</sup> The characteristics of construction projects are defined in a multi-dimensional BIM model. For more on BIM see: [http://www.mosaicprojects.com.au/WhitePapers/WP1082\\_BIM\\_Levels.pdf](http://www.mosaicprojects.com.au/WhitePapers/WP1082_BIM_Levels.pdf)

<sup>6</sup> For more see **Projects aren't Projects**: <http://mosaicprojects.wordpress.com/2009/04/09/projects-arent-projects2/>

<sup>7</sup> For more see: **Avoiding the Successful Failure** - [http://www.mosaicprojects.com.au/Resources\\_Papers\\_046.html](http://www.mosaicprojects.com.au/Resources_Papers_046.html)



<b>What To do</b>	<b>Unclear</b>	<b>Semi-Open or Making a Movie</b>	<b>Open or Lost in the Fog</b>
		<ul style="list-style-type: none"> <li>▪ Stakeholders are very sure about how the project is to be done</li> <li>▪ Stakeholders are unsure of what is to be done</li> <li>▪ The organisation is clear about the method to be used and has the expertise</li> <li>▪ It needs to spend time defining what</li> </ul>	<ul style="list-style-type: none"> <li>▪ Stakeholders are unsure what is to be done</li> <li>▪ Stakeholders are unsure how the project is to be done</li> <li>▪ The organisation is attempting to do something not been done before</li> <li>▪ The organisation needs to spend time defining what and how</li> </ul>
	<b>Clear</b>	<b>Closed or Painting by Numbers</b>	<b>Semi-closed or Going on a Quest</b>
		<ul style="list-style-type: none"> <li>▪ Stakeholders are sure about what is to be done</li> <li>▪ Stakeholders are very sure about how the project is to be done</li> <li>▪ The organisation is going through a repetitive project and knows the skills needed</li> <li>▪ Written procedures, methods and systems are available to replicate what has been done in the past</li> </ul>	<ul style="list-style-type: none"> <li>▪ Stakeholders are sure about what is to be done</li> <li>▪ Stakeholders are unsure how the project is to be done</li> <li>▪ The organisation needs to spend time on defining how</li> </ul>
		<b>Clear</b>	<b>Unclear</b>
		<b>How To Do It</b>	

Source: Obeng E (1994) *The Project Leader's Secret Handbook*. Financial Times Prentice Hall

### Complexity = The People

This aspect of a project is unpredictable and centres on the effectiveness of the relationships within the project team and with the external stakeholder community.

Complexity Theory<sup>8</sup> has become a broad platform for the investigation of complex interdisciplinary situations and helps understand the social behaviours of teams and the networks of people involved in and around a project. These ideas apply equally to small in-house projects as to large complicated programs. In this regard, complexity is not a synonym for complicated or large<sup>9</sup>.

Effective stakeholder management<sup>10</sup> is the key to obtaining the commitment needed to effectively deliver the project both from within the project team and from the key stakeholders.

<sup>8</sup> For more on **Complexity Theory** see: [http://www.mosaicprojects.com.au/WhitePapers/WP1058\\_Complexity\\_Theory.pdf](http://www.mosaicprojects.com.au/WhitePapers/WP1058_Complexity_Theory.pdf)

<sup>9</sup> For further discussion see: **A Simple View of 'Complexity' in Project Management** - [http://www.mosaicprojects.com.au/Resources\\_Papers\\_070.html](http://www.mosaicprojects.com.au/Resources_Papers_070.html)

<sup>10</sup> For more on **stakeholder management** see: [http://www.mosaicprojects.com.au/WhitePapers/WP1007\\_Stakeholder\\_Cycle.pdf](http://www.mosaicprojects.com.au/WhitePapers/WP1007_Stakeholder_Cycle.pdf)



## Project Categorisation

A project categorisation system should:

- provide an appropriate category for any project we may encounter,
- permit classifications within each category,
- provide useful insight about differences between projects in one category and projects in every other category, and
- be readily translatable and comprehensible across the organisation.

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