

PROJECT CATEGORIES AND LIFE CYCLE MODELS: REPORT ON THE 2003 IPMA GLOBAL SURVEY

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1. ABSTRACT

Report of Global Survey Results: This paper briefly reports the results of the global survey conducted via the Internet during 2003, as described in the paper by the authors [1]. Due to space limitations here, specific responders' comments cannot be included. A more complete report that includes the verbatim comments of responders will be posted before June 30 2004, together with our 2003 paper, at www.sovnet.ru and <http://www.pmforum.org/library/> .)

Underlying Rationale for the Survey: The discipline of project management (PM) holds the promise of enabling peaceful global cooperation and collaboration across all political, cultural and economic boundaries. However in order to realize that goal we must achieve a common understanding and reasonably uniform application of the underlying principles and practices of project management on a global basis. It seems logical to enhance this effort by building an agreed list of project categories, since projects themselves are the common denominators throughout the many aspects of the discipline of project management.

Why did we engage in this survey? The purposes were to:

- Recognize the great variety of projects and life cycle models [2, 3]
- Establish the need for and uses of a commonly agreed project classification method
- Begin to determine how PM practitioners in all countries commonly identify their projects in terms of categories or types
- Identify the various life cycle models being used within each proposed category.
- Define their features and influence on parameters of PM processes and tasks [3, pp 23-25].

Based on these results our plan was then to choose and prove a set of project categories and sub-categories as the basis for an agreed classification system that enables the definition of the needs and characteristics of adequate project management systems (PMS), thereby leading to more logical development of more effective management systems.

We believe that current practice, as well as the referenced system PM model in [4], shows that any single project, compared to others, can have different:

- Concepts and structures of their life cycle models
- Concepts and structures of the PBS, WBS, OBS, CBS, etc., for different objects and subjects [4]
- Action models (bar charts, networks, other?)
- Mathematical statements of project tasks [4]
- Methods and tools for various tasks.

The resulting conclusion is that different types of projects require different PM processes, methods and tools.

2. GENERAL DESCRIPTION OF THE SURVEY AND ITS RESULTS

How the Global Survey Was Conducted: A web site was designed and established (www.ipmaglobalsurvey.com) that contained (in both English and Spanish languages) a one page introduction to the questionnaire, a two-part questionnaire, and the full paper from the 2003 Moscow Congress. The authors publicized the survey and web site at the 2003 Moscow Congress and via email to all the leaders in IPMA member organizations, all PMI Chapter Presidents and potential chapter sponsors, all PMI Fellows, and a large number of other colleagues active in PM around the world, requesting that they promulgate the survey to their members and colleagues. Additionally, the survey was described and its web link listed on a number of web sites related to PM, and it was listed on the PMI web site as an external research project. The questionnaire was accessible and could be completed on-line, and then submitted via email to the survey web site.

Number of Responses: 31 completed questionnaires were received from 11 countries: Brazil (9), Canada (1), Colombia (4), Egypt (1), France (1), Germany (2), Great Britain (1), Lithuania (1), Mexico (3), Russia (1) and the United States of America (7).

Analysis of the Disappointingly Low Number of Responses: Several factors are believed to have influenced the very low number of completed questionnaires:

- Lack of recognition within the PM communities of the importance of 1) developing an agreed project classification system and 2) identifying the related life cycle models for each project category.
- The questionnaire, was too long (6 pages in hard copy), required too much time to complete, not well designed by the authors, too complex, and was ambiguous to some responders.
- Trying to survey both proposed list of project categories and also their related project life cycle models in one questionnaire was too much to attempt at one time.
- There was no inducement for people to spend the time and energy needed to complete the questionnaire other than their desire to contribute to the advancement of the PM discipline.
- The availability of the questionnaire only in English and Spanish limited the responders to persons who understand those languages.

3. CONCLUSIONS THAT CAN BE DRAWN FROM THE FEW SURVEY RESPONSES

The Need for an Agreed World-Wide List of Project Categories: There was nearly unanimous agreement by the responders that having such a list is desirable, advantageous and useful. In response to the question:

Is it desirable, advantageous, and useful to develop an agreed world-wide list of project categories and sub-categories, either like this, emphasizing the products of the projects initially, or using some other categorization method?

26 said yes, 1 said no, and 4 did not reply. Their specific comments on this and the following questions can be seen as appendices to the more complete version of this present paper at www.ipmaglobalsurvey.com.

Other Project Categorization Methods in Use: In response to the question:

Are you aware of other categorization methods presently in use within the subject country (or elsewhere)?

18 said 'no', 8 said 'yes', and 5 did not reply.

Using Project Categories to Select Appropriate Methodology: 92% of those responding to this question:

Do you believe that having a widely accepted definition of project categories and sub-categories will be useful to you for selecting the most effective methodology for managing projects within each category?

answered 'yes' (24 of 26) and 2 answered "no" (5 did not reply.)

The Need for an Agreed World-Wide List of Project Life Cycles for Each Project Category: There was nearly unanimous agreement to a positive answer to the question:

Is it desirable, advantageous and useful to develop an agreed world-wide list of project life cycles for each project category and sub-category, if agreement can be reached on the names of such categories?

23 said yes, 1 said no, and 7 did not reply.

Other Project Life Cycle Definitions in Use: In response to the question:

Are you aware of other project life cycle names and/or descriptions not included in Table 2 of the Archibald/Voropaev paper cited earlier that are presently in use within the subject country (or elsewhere)?

17 said no, 4 said yes, and 10 did not respond.

4. CLASSIFYING PROJECTS

No Conclusions Can Be Drawn Concerning the Proposed Project Categories: Table 1, from the 2003 paper referenced earlier and used in the survey questionnaire, shows the proposed project categories and sub-categories. These are based primarily on the nature of the end results to be produced by each project. The survey objectives in this regard were to test the validity of this classification method and to discover what, if any, other methods are in widespread use in various countries. The on-line questionnaire enabled the responder to select one of five terms for each category and sub-category name from a drop-down list that included these choices (within the country from which the responder is reporting):

- Universally accepted and used
- Widely accepted and used
- Accepted and used by some practitioners
- Rarely accepted and used
- Never accepted and used.

Spaces for an alternative name and for comments and each item were also provided.

Because of the small number of responses from each country, ranging from 1 to a maximum of 7, it is not possible to draw any valid conclusions regarding 1) how widespread the use is of the proposed categories, 2) the

Project Categories: Each having similar life cycle phases and a unique project management process	Examples
1. Aerospace/Defense Projects 1.1 Defense systems 1.2 Space 1.3 Military operations	New weapon system; major system upgrade. Satellite development/launch; space station mod. Task force invasion
2. Business & Organization Change Projects 2.1 Acquisition/Merger 2.2 Management process improvement 2.3 New business venture 2.4 Organization re-structuring 2.5 Legal proceeding	Acquire and integrate competing company. Major improvement in project management. Form and launch new company. Consolidate divisions and downsize company. Major litigation case.
3. Communication Systems Projects 3.1 Network communications systems 3.2 Switching communications systems	Microwave communications network. 3 rd generation wireless communication system.
4. Event Projects 4.1 International events 4.2 National events	2004 Summer Olympics; 2006 World Cup Match. 2005 U. S. Super Bowl; 2004 Political Conventions.
5. Facilities Projects 5.1 Facility decommissioning 5.2 Facility demolition 5.3 Facility maintenance and modification 5.4 Facility design/procurement/construction Civil Energy Environmental High rise Industrial Commercial Residential Ships	Closure of nuclear power station. Demolition of high rise building. Process plant maintenance turnaround. Conversion of plant for new products/markets. Flood control dam; highway interchange. New gas-fired power generation plant; pipeline. Chemical waste cleanup. 40 story office building. New manufacturing plant. New shopping center; office building. New housing sub-division. New tanker, container, or passenger ship
6. Information Systems (Software) Projects	New project management information system. (Information system hardware is considered to be in the product development category.)
7. International Development Projects 7.1 Agriculture/rural development 7.2 Education 7.3 Health 7.4 Nutrition 7.5 Population 7.6 Small-scale enterprise 7.7 Infrastructure: energy (oil, gas, coal, power generation and distribution), industrial, telecommunications, transportation, urbanization, water supply and sewage, irrigation)	People and process intensive projects in developing countries funded by The World Bank, regional development banks, US AID, UNIDO, other UN, and government agencies; and Capital/civil works intensive projects— often somewhat different from 5. <i>Facility Projects</i> as they may include, as part of the project, creating an organizational entity to operate and maintain the facility, and lending agencies impose their project life cycle and reporting requirements.
8. Media & Entertainment Projects 8.1 Motion picture 8.2 TV segment 8.2 Live play or music event	New motion picture (film or digital). New TV episode. New opera premiere.
9. Product and Service Development Projects 9.1 Information technology hardware 9.2 Industrial product/process 9.3 Consumer product/process 9.4 Pharmaceutical product/process 9.5 Service (financial, other)	New desk-top computer. New earth-moving machine. New automobile, new food product. New cholesterol-lowering drug. New life insurance/annuity offering.
10. Research and Development Projects 10.1 Environmental 10.2 Industrial 10.3 Economic development 10.4 Medical 10.5 Scientific	Measure changes in the ozone layer. How to reduce pollutant emission. Determine best crop for sub-Saharan Africa. Test new treatment for breast cancer. Determine the possibility of life on Mars.
11. Other Categories?	

Table 1. Recommended project categories/sub-categories, with each category (or subcategory) having similar project life cycle phases and one unique process management process [Archibald 2003, Fig. 2.3, p.35, and [2]].

validity of the proposed names, or 3) the general approach of basing the classification system first on the end results to be produced by each project. General comments that can be made, based on the 30 questionnaires submitted, include:

- Very few of the proposed category names were identified as “never” being used
- Most of the categories and names were recognized and identified with one of the first four choices listed above, with the second and third (widely used and used by some) being the most predominate.
- 8 responses referred to other project classification methods but no specific references were given. Follow up with those responders is required.

Subordinate Classification Factors: Again, because of the small number of responses no valid conclusions can be reached regarding the use of the subordinate classification factors included in the survey questionnaire, which are shown below in Table 2.

Within a project category or sub-category, is it usual or desirable practice to classify projects according to:

Factor	Yes	No	Your Priority Ranking of this list (1-7)	Comments
Project size				
Project complexity				
Customer identity or importance				
Customer involvement				
Level and type of risk				
“Major” versus “Minor” projects				
Other (give names)				

Table 2. Subordinate Classification Factors.

5. PROJECT LIFE CYCLE MODELS USED FOR SPECIFIC CATEGORIES

No Conclusions Can Be Drawn Concerning the Responses Regarding Life Cycle Models: Because of the small number of responses no valid conclusions can be drawn on this topic. A portion of the survey questionnaire for this is shown below:

For each line item in the following table please enter, for the country identified on page 1:

- *The number of life cycle phases (a range is acceptable, like 4 to 6) in Column 2.*
- *The number of decision points (go-no go, ‘gates’, etc.) typically used in Column 3.*
- *One or more of the following codes in Column 4 for the life cycle model (or models) in prevalent use.*
- *Any comments that you think are pertinent in Column 5.*

If you added any categories or sub-categories in Part 1 of this survey, please add these to this table with appropriate life cycle entries as well.

<u>Code</u>	<u>Type of Life Cycle Model</u>	<u>Code</u>	<u>Type of Life Cycle Model</u>
SEQ	Sequential (end to end)	ITER	Iterative model
WF	Waterfall (overlapping phases, stair-step fashion)	ADAP	Adaptive model
PAR	Parallel phases	GATE	Stage-Gate type model
CYC	Cyclical model	CFIX	Code and Fix model
SPIR	Spiral model	SPEC	Special model (describe in comments column)
INCR	Incremental model		

Project Categories & Sub-Categories	Number of		Type(s) of Life Cycle Model Used (Use code from drop-down list)	Comments
	Life Cycle Phases	Decision Points (go-no go)		
1. AEROSPACE/DEFENSE PROJECTS				
1.1 Defense systems				
1.2 Space				
1.3 Military operations				
1.4 Other (give name)				

[The remaining items in Table 1 were also included in the survey questionnaire.]

6. CONCLUSIONS

Urgency of the Need for and Importance of the Uses of a Project Classification Method: In spite of the limited number of responses received to the survey questionnaire, the authors conclude that the objective of developing an agreed, world-wide system of classifying projects is urgently needed for the continued improvement and further understanding of the discipline of project management. Such a system will prove to have many practical uses, including, for each project category and sub-category:

- Selecting the most appropriate PM methodologies
- Development and application of the most effective project life cycle models
- Defining needs of adequate project management systems (PMS) and developing the system methodology for their creation
- Development of tailored education and training curricula and materials (bodies of knowledge)
- Development of specialized software applications
- Certification of project managers and planning and control specialists.

Application of “One-Size-Fits-All” Project Management Methods Causes Many Project Failures: In the absence of agreed project categories with best practices identified for each, across-the-board application of inappropriate methods and systems has been a root cause of many project failures.

First Level Category Based on End Results: We also conclude that the proposed approach, namely to base the first level of project classification breakdown on the end results of each project, remains valid. The specific names and criteria for defining the specific project categories remain to be established through further examination of current practices in many industries together with further research into the key characteristics of the projects within each category and sub-category.

Development of a Global Project Classification Method Is a Major, Multinational Project: Achieving the objective of this global survey is beyond the ability of any two authors, practitioners, or researchers, and requires the planning and execution of a major, multinational research project.

7. RECOMMENDED FURTHER ACTIONS

The authors do not have any specific plans to continue further work on this global survey of project categories and life cycle models. However, we recommend the following actions for consideration as projects by a combination of (1) the research and standards arms of member organizations of IPMA, PMI and other professional associations (such as AACeI, PDMA, asapm, and others) involved in the discipline of project management, (2) colleges and universities as master’s and doctoral thesis topics, (3) governmental agencies, (4) international development banks, (5) PM consulting and software vendors, and (6) interested and qualified individuals:

1. **Document the need for development of an agreed world-wide project classification method and identify the uses of such a method.**
2. **Develop an agreed, practical world-wide project classification method reflecting what practitioners are using today but enabling and fostering continued advancement in the state of the art of project management across geographic and political boundaries.**
3. **Identify the major life cycle models being used today and under development, and relate them to the agreed project classification system.**
4. **Form a multi-national team of practitioners and researchers to carry out these projects.**

The authors will be happy to join an international team that is willing to take responsibility for planning and executing any or all of these or similar research projects. Ideally such a team would have one project manager residing in each country that is active in PM, under the integrative guidance of a world-wide program manager sponsored by a consortium of professional associations, with a Steering Group acting as the Program Sponsor.

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