

**A Serious Answer to a Serious Question:
What are the fundamental differences between project work and operations work
Published February 2013.**

Introduction

On October 29, 2012 Dr. Janice Thomas¹ of Athabasca University sent us an Email posing a serious question:

"Now I have a question for you.

As we discussed in our short time [together]², if we are going to progress "theories" of project management we need to be able to argue a distinction between general management and project management. To do that we need to be able to define the characteristics of projects that make them fundamentally different than operations *and* I think make an argument for what should and shouldn't be considered a project (otherwise project management is just time management on steroids?). If we cannot make this argument, then general management thoughts on leadership, teams, budgets, schedules etc. need only be applied in the project context and there is no need for separation between project and general management.

This is really more challenging than you might think as we spent the whole Sunday with Blaize³ (and 10 others) identifying potential differences and then knocking them down.

My colleague Thomas Lechler and I have been throwing this issue around for a couple of years now and I think we are settling on a couple of distinctions that we can argue make projects theoretically different than operations (level of uncertainty, time focus, formal end point to name a few). But it is really tough if you include everything people lump into the category of projects. I think this is why some are trying to make a case for "complex" or "mega" projects.

So here is my question for you.

What do you think are the differences between project work and operations work that makes the management of same fundamentally different?"

Our response

Now that's a very good question. Note that the question is not just asking what are the differences between project management and operations management, but what are the fundamental differences in managing the respective work – if any. We certainly had to scratch our head a bit. It seemed to us that before jumping in and dreaming up some "fundamental differences", it is first necessary to make sure we are clear on what we mean by "projects" and by "operations" in the first place.

Of course "work" as the result of a new initiative of some sort is clearly best managed as a "project", while "work" that is being done on a routine basis and has been done like that for some time is just as clearly a part of "operations". Nevertheless, there are a surprising number of situations where the "work" can go one way or the other. That is, management can decide to manage this class of ambivalent work as a part of operations, or separate it out as a project – and manage either way accordingly.

But back to the main question, the next obvious issue is to pose the counter question: "In what context?" And to this, given the background of the owner of the original question, we assumed that the answer is in the context of the evolving and currently popular espoused disciplines of project management and operations management. So, as a starting point, we decided to rephrase the question thus: "What are the fundamental differences between managing project work (i.e. project management) and managing operations work (i.e. operations management)? Note that this is not exactly the same as the original question because this revision shifts the focus from the "work" to the "management of the work". However, this does allow us to look for the comparison from a broader perspective.

Our first reaction was to check the traditional management sources⁴ for help in this regard, especially for the respective definitions. For example, the Project Management Institute ("PMI") did a lot of work on this issue as a prelude to launching its Project Management Professional ("PMP") certification program around 1984.⁵ Unfortunately, the definitions of "project management" and "project" are multifarious and often hotly contested,⁶ and insufficiently robust for the purposes of this inquiry. Similarly, you might think that Operations Management and Business Operations would be the same thing – but apparently not, well, not quite.

So we turned to Wikipedia, the free on-line independent encyclopedia, for a public and erudite viewpoint.

Wikipedia definitions of Project and Operations Management

Project management⁷

"Project management is the discipline of planning, organizing, securing, managing, leading, and controlling resources to achieve specific goals. A project is a temporary endeavor with a defined beginning and end (usually time-constrained, and often constrained by funding or deliverables),⁸ undertaken to meet unique goals and objectives,⁹ typically to bring about beneficial change or added value. The temporary nature of projects stands in contrast with business as usual (or operations),¹⁰ which are repetitive, permanent, or semi-permanent functional activities to produce products or services. In practice, the management of these two systems is often quite different, and as such requires the development of distinct technical skills and management strategies.

"The primary challenge of project management is to achieve all of the project goals¹¹ and objectives while honoring the preconceived constraints.¹² The primary constraints are scope, time, quality and budget.¹³ The secondary—and more ambitious— challenge is to optimize the allocation of necessary inputs and integrate them to meet pre-defined objectives."

Operations management¹⁴

"Operations management is an area of management concerned with overseeing, designing, and controlling the process of production and redesigning business operations in the production of goods and/or services. It involves the responsibility of ensuring that business operations are efficient in terms of using as few resources as needed, and effective in terms of meeting customer requirements. It is concerned with managing the process that converts inputs (in the forms of materials, labor, and energy) into outputs (in

the form of goods and/or services).

"The relationship of operations management to senior management in commercial contexts can be compared to the relationship of line officers to highest-level senior officers in military science. The highest-level officers shape the strategy and revise it over time, while the line officers make tactical decisions in support of carrying out the strategy. In business as in military affairs, the boundaries between levels are not always distinct; tactical information dynamically informs strategy, and individual people often move between roles over time.

"According to the U.S. Department of Education, operations management is the field concerned with managing and directing the physical and/or technical functions of a firm or organization, particularly those relating to development, production, and manufacturing. Operations management programs typically include instruction in principles of general management, manufacturing and production systems, plant management, equipment maintenance management, production control, industrial labor relations and skilled trades supervision, strategic manufacturing policy, systems analysis, productivity analysis and cost control, and materials planning.¹⁵ ¹⁶ Management, including operations management, is like engineering in that it blends art with applied science. People skills, creativity, rational analysis, and knowledge of technology are all required for success."

Wikipedia definition of Business Operations

Business operations¹⁷

"Business operations are those ongoing recurring (cyclic) activities involved in the running of a business for the purpose of producing value for the stakeholders. They are contrasted with project management (business change managers are responsible for bridging the gap between the projects and business operations¹⁸), and consist of business processes.

"The outcome of business operations is the harvesting of value from assets owned by a business. Assets can be either physical or intangible. An example of value derived from a physical asset like a building is rent. An example of value derived from an intangible asset like an idea is a royalty. The effort involved in "harvesting" this value is what constitutes business operations cycles.

"Business operations encompasses three fundamental management imperatives that collectively aim to maximize value harvested from business assets (this has often been referred to as "sweating the assets"):

1. Generate recurring income
2. Increase the value of the business assets
3. Secure the income and value of the business

"The three imperatives are interdependent. The following basic tenets illustrate this interdependency:

- The more recurring income an asset generates, the more valuable it becomes. For example, the products that sell at the highest volumes and prices are usually considered to be the most valuable products in a business's product portfolio.
- The more valuable a product becomes the more recurring income it generates. For example, a luxury car can be leased out at a higher rate than a normal car.
- The intrinsic value and income-generating potential of an asset cannot be realized without a way to secure it. For example, petroleum deposits are worthless unless processes and equipment are developed and employed to extract, refine, and distribute it profitably.

"The business model of a business describes the means by which the three management imperatives are achieved. In this sense, 'business operations' is the execution of the business model."

What did we learn?

All three of these definitions explicitly state or infer:

- Scope – The production of something of value
- Quality – Some implied standard to be achieved or maintained in both regimes
- Time and Cost – Constraints in both cases
- Stakeholder/Customer Satisfaction – Essential for success in both cases
- Communication and Administration – Obvious activities in both cases
- Managing and directing, overseeing, designing, and controlling are also evident in all three descriptions.
- People skills, creativity, rational analysis, and knowledge of technology are all required for success in both cases

However, there are some noticeable differences:

- Risks are not mentioned in either case, but we may assume lower risks in the case of operations by virtue of the opportunity to learn through repeated activity.
- Projects have limited time spans, described as "temporary", the duration of which is determined by the delivery of an acceptable product. That is, a product that is designed to *deliver* some benefit.
- Operations are on-going and designed to maximize value harvested from business assets. That is to *collect* benefits.

Wikipedia examples of projects and operations

Project¹⁹

"A project in business and science is typically defined as a collaborative enterprise, frequently involving research or design, that is carefully planned to achieve a particular aim.²⁰ Projects can be further defined as temporary rather than permanent social systems that are constituted by teams within or across organizations to accomplish particular tasks under time constraints.²¹"

Wikipedia goes further and picks out two particular types of project.

School and university project²²

"At school, educational institute and independent work that is involved in a normal essay assignment. It requires students to undertake their own fact-finding and analysis, either from library/internet research or from gathering data empirically. The written report that comes from the project is usually in the form of a dissertation, which will contain sections on the project's inception, methods of inquiry, analysis, findings and conclusions....²³"

Engineering project²⁴

"Engineering projects are, in many countries, specifically defined by legislation, which requires that such projects should be carried out by registered engineers and/or registered engineering companies. That is, companies with license to carry out such works as design and construction of buildings, power plants, industrial facilities, installation and erection of electrical grid networks, transportation infrastructure and the like.

The scope of the project is specified in a contract between the owner and the engineering and construction parties. As a rule, an engineering project is broken down into design and construction phases. The outputs of the design process are drawings, calculations, and all other design documentation necessary to carry out the next phase. The next phase would normally be sending the project plans to a developer who will then help construct the plans (building).²⁵"

Note that this limited description ignores any of the work in the preparation of the contract and all the work that precedes it.

Operations

Wikipedia does not offer a description of "operations" on its own, but only in the context of specific fields such as Business operations (described above); Military operations (deployment of field forces); Rail transport operations (the control of a rail system), Commercial operations (the conduct of activities in return for remuneration or other valuable consideration) and so on.

What did we learn?

All four of these definitions explicitly state or infer:

- A series of activities in a logical sequence designed to produce some output.
- In other words, they all represent some form of process.
- They all also appear to involve a number of very similar activities such as researching/analysis, planning, design, organizing, conducting/controlling (but with specific skills suited to the types of production work) and delivery.

However, there are differences, as we might now expect:

- The project definitions imply a "once through" process to completion in a temporary team environment.
- The operations definitions generally imply the main process being continuously repeated by the same staff or team working on a permanent operational basis.

In summary, from these observations it is evident that both projects and operations involve many similar sounding activities. The outstanding difference is that projects are finite and operations are on-going. In fact Dr. Peter Morris has observed that this is likely the single differentiator between the two. Or as Dr. Rodney Turner²⁶ is fond of saying, unlike operations: "A project has a start and a finish and *a bit in the middle.*"

Differences at the work level

The original question posed by Dr. Janice Thomas sought the *differences* between *project work* and *operations work*. If many, even most, activities appear to be similar in both projects and operations, is there any difference in how the respective team members go about their individual work, other than one group being temporary and the other permanent? For this we have to look a little closer at the impact of temporary versus permanent. Some examples:

- Management of product scope: In a project there is only one, or a limited number, of opportunities to get it right through careful planning. That requires planning and forecasting skills applied in a very focused way. Operations involve continuous efforts to improve the efficiency of the process for product throughput, by learning by doing and this generally requires work study type skills.
- Management of quality: Generally the same as for product scope, except that in projects, skills are required in establishing a quality grade and then tracking product design and evolution to that standard neither more nor less. In operations, skills such as observations of production and statistical analysis of the resulting data are required.
- Management of time: For many projects the delivery deadline is absolute and achieved by means of a viable network analysis, and controlled by monitoring and suitable adjustment strategies applied to the constraints. For operations delivery dates are ideal but viewed as flexible. Since production is repetitive, improvements are achieved by taking advantage of "learning curve" phenomena.
- Management of cost: While both areas work to budgets, project managers and their teams focus on the cost of the remaining work to be done and that emphasizes estimating skills. Operations people, and their accountants, on the other hand, focus on costs-to-date with a view to cost reduction by improving performance track records in the next batch. That requires traditional accounting skills.
- Management of risk: In project work the risk is high because the particular case has not been experienced before. That requires project risk management skills. In operations the corresponding risks are much lower by virtue of previous experience in a relatively steady state environment. The operational environment requires skills in assessing business risks.

The affect on the worker

An obvious difference is in the skills that need to be brought to bear in each case. However, these tend to be more a reflection of the work involved in producing the particular product and this varies not only from project to project but also from industry to industry. Nevertheless, a humorist has once joked that

the aim of the project team is to desperately work them selves out of a job, while the operations people are desperately trying to keep their jobs!

More seriously, not only are there differences in skill sets or even the focus of similar skill sets, but there are also distinct differences in stress levels between the two types of work. In projects, individual stress generally peaks towards the end of the product execution phase, easing off as the product is transferred to the "care, custody and control" of its new owners. Of course, looking for the next project can be stressful, too. For operations people, stress is more evenly distributed and generally a reflection of the culture created by the competence of the corporate senior management.

Conclusion

The differences described do lead to broad differences in personality types suited to either project work or operations work. Indeed, people who are suited to, and therefore enjoy, project work become quite unhappy when transferred to operations – and vice versa.²⁷ In other words the two groups of people have different mindsets.

That means that each group has to be managed quite differently. As discussed in an earlier paper on this web site – projects need leadership while operations require "managership".²⁸

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² At the Project Management Institute's Global Congress in Vancouver, Canada

³ Reich, Dr. Blaize, Simon Fraser University, Vancouver

⁴ That is to say the existing recognized project and operations management associations.

⁵ The original conclusions of the work done by Dr. John Adams around 1983-5 is captured in summary form in the following Issacons: [Project Management Topic Levels](#); [Why Project Management?](#); [Special Features of Projects](#); and [Comparing Projects & Operations](#).

⁶ For "project" see http://www.maxwideman.com/pmglossary/PMG_P09.htm#Project; for "project management" See http://www.maxwideman.com/pmglossary/PMG_P12.htm#Project%20Management

⁷ See http://en.wikipedia.org/wiki/Project_management

⁸ Chatfield, Carl. *A short course in project management*, Microsoft.

⁹ Nokes, Sebastian *The Definitive Guide to Project Management*, 2nd Edn. London (Financial Times / Prentice Hall): 2007. ISBN 978-0-273-71097-4

¹⁰ Dinsmore, Paul C. et al *The right projects done right!* John Wiley and Sons, 2005. ISBN 0-7879-7113-8. p.35 and further.

¹¹ Ireland, Lewis R. *Project Management*. McGraw-Hill Professional, 2006. ISBN 0-07-147160-X. p.110.

¹² Phillips, Joseph (2003). *PMP Project Management Professional Study Guide*. McGraw-Hill Professional, 2003. ISBN 0-07-223062-2 p.354.

¹³ Project Management Institute, *A Guide to the Project Management Body of Knowledge* 4th Edn p.27-35

¹⁴ See http://en.wikipedia.org/wiki/Operations_management

¹⁵ U.S. Department of Education Institute of Education Sciences: *Classification of Instructional Programs* (CIP). Retrieved on October 26, 2009 from CIP 2000 - CIP Lookup to Occupational Crosswalks

¹⁶ ATMAE Membership Venn Diagram

¹⁷ See http://en.wikipedia.org/wiki/Business_operations

¹⁸ See <http://www.pmhut.com/role-and-responsibilities-of-the-business-change-manager>, Retrieved June 6, 2010

¹⁹ See <http://en.wikipedia.org/wiki/Projects>

²⁰ Oxford English Dictionary

²¹ Manning, Stephan A *Structuration Perspective* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1582680

²² Ibid

²³ Thomas, G: *How to do your research project*, Sage Publications Inc., 2009

²⁴ Ibid

²⁵ E.g. civil

²⁶ Rodney Turner, author and editor of *The International Journal of Project Management*, and Professor of Project Management at Erasmus University, Rotterdam

²⁷ See [Dominant Personality Traits Suited to Running Projects Successfully \(And What Type are You?\)](#) and [Project Teamwork, Personality Profiles and the Population at Large: Do we have enough of the right kind of people?](#)

²⁸ For articles on this topic, see [Project Manager to Project Leader? And the Rocky Road Between...](#)