

***REALISTIC AND REASONABLE
OWNER PROJECT REQUIREMENTS
A CLIENT'S PERSPECTIVE***

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EXECUTIVE SUMMARY

How important are maximizing project efficiencies while minimizing project costs to your organization? How confident are you in your organization's ability to optimize efficiencies and costs? What process(es) does your organization use to ensure consistent success with project delivery?

Owner Project Requirements, or OPR, continues to be a somewhat obscure term today. Apart from 1) capital project teams at large, well-funded institutions, or 2) owners very familiar with project commissioning, the term is usually unfamiliar to project teams. However, when properly executed during the project planning phase, the development of Owner Project Requirements can become one of the most critical steps in overall project execution. According to the American Society of Heating, Refrigerating and Air-Conditioning Engineers, or ASHRAE, Owner Project Requirements detail the functional requirements of a project and the expectations of how it will be used. It includes project and design goals, measurable performance criteria, and other critical information.

An OPR can influence the entire project team's experience and ultimate success of the project. Key project team members generally include representatives from the Client, or Owner; the Architect; the Design Engineer; the Construction Manager (CM); key subcontractors, and ultimately the end-users of a facility or space including researchers, professors, nurses, operators, patients, maintenance workers, cleaning crews, etc. Skipping the Owner Project Requirements process may prove to be very costly to your project's overall success. Making this relatively small investment will almost certainly ensure the project is defined and delivered in the most successful manner possible.

INTRODUCTION

The greatest value realized through the OPR process is that all involved parties engage in defining the project requirements, more completely considering and delivering to all stakeholder needs. Listening to the concerns, wants, and needs from a variety of stakeholders and including even a few of their recommendations in the design will make for a more successful project and overall efficient operation post-delivery. This certainly applies to healthcare, science & technology, and higher education projects. Stakeholders like patients, customers, operators, maintenance workers, etc. will think of building needs and requirements that even the most seasoned designers will not. The OPR document will serve to optimize project delivery for all interested parties. When the project team works together and commits to following the OPR guidelines, it will result in a reduction of change orders and rework, therefore reducing overall costs. This commitment will help the project team align around the fulfillment of project goals, requirements, and ultimate success.

A successful OPR process should always lead to very meaningful cost savings on a construction project. The scale of those savings depends upon the size and scope of the project, as well as commitment from the project team. For a small, \$1 million project, the savings could be less than \$20k-\$25k, however for a large project in the \$100's of millions, the savings could exceed \$1 million, or perhaps even several million dollars. Are you willing to take that risk, or would you prefer to present an efficient and affordable service to your executive team which ensures no detail is missed during the planning process?

A reader might wonder why they've never heard the term "Owner Project Requirements"; ask why the OPR process is important; and why they should consider implementing the process on their next significant project. The OPR informs the Design and Construction teams from the programming phase through final occupancy and Operational Readiness of the facility on behalf of all the potential end users. Any commissioning firm should be familiar with this process. In fact, it is usually the first, or one of the first project activities a commissioning firm completes and formally documents.

At Pintail Solutions, we believe the Owner's Representative or Owner's Project Manager (OPM) is better suited to perform this service than most commissioning agents. The commissioning agent is a service provider, much like an architect or engineer. While usually very talented, they tend to operate within a very structured and rigid framework, oftentimes not exploring all the end-user or 'customer' needs. Effective Owner's Representatives and OPMs become part of the Owner's team; they don't operate as a separate entity, but part of the core team whose sole mission is to achieve **ALL** the client goals and ensure things are done correctly. Furthermore, commissioning agents, architects, and engineers almost always lack operational experience within the industries they serve, while the Pintail Solutions team has years of experience serving within those industries, bringing critical and unique perspectives to how well the design will meet all of the owner's needs.

Occasionally an owner chooses not to include commissioning in their project – perhaps they don't have the budget, or simply believe commissioning is not needed for one reason or another. This mindset is a recipe for disaster, as commissioning should be included in every major capital project. With that said, the OPR process should be completed regardless of whether a commissioning agent is involved or not, and it doesn't have to be completed with a focus on Mechanical, Electrical, and Plumbing MEP outcomes, as that is but one component of a comprehensive OPR document.

CUSTOMER AND EMPLOYEE ENGAGEMENT

All projects are initially conceived as an improvement upon the current state, or as a new service altogether. If not solving a problem, improving quality, creating efficiencies, or growing revenue, why invest the time or money? With that in mind, who are the true customers - the people the project team needs to satisfy?

Consider the environmental monitoring requirements in a GMP pharmaceutical manufacturing facility. Everyone understands the requirements for temperature, humidity, pressure differentials, and air particle monitoring, however, has the design team asked the plant operators what might make their jobs easier? These team members have tremendous responsibility. If they are unable to properly maintain systems and infrastructure, the revenue-producing operations are at risk, as are fulfilling contracts and orders. Hearing the concerns and recommendations of these critical employees will reduce the opportunity for mistakes, ensure consistency, improve reliability, make for easier training and comprehension, and ultimately reduce operating costs. No one understands the systems they're responsible for better than they do.

At a university, the "customer" should be viewed as the students, parents, faculty, and staff. In a hospital, the "customer" should be viewed as the patients above all, followed by patient families and friends, providers, and other clinical staff. But what about everyone else? In a healthcare setting, members of the Supply Chain team deliver materials to inpatient units. Food Services staff deliver food to patients. Environmental/Cleaning Services staff clean patient or manufacturing rooms and nearly every other space. Facilities Management staff ensure reliable operations of equipment & utilities, which requires access to patient areas to perform important maintenance activities.

Complex internet systems infrastructure is critical to the successful operation of all new facilities; therefore Information Services/IT team members should also be invited to participate. Each of these operations teams should be given a voice during the planning process alongside the leadership team. They know better than anyone, most notably architects and designers, what the greatest challenges are in providing a high level of service in the safest, most efficient manner.

As a project leader on a higher education project, when was the last time student representatives were included in the planning and design phase? What don't they like about existing facilities, classrooms, dormitories, labs, lecture halls, etc.? What would they like to see more of? On healthcare projects, when was the last time a committee consisting of patients and families were involved in the design process? Has that involvement carried through the entirety of the project, or were those representatives invited to participate in only 1-2 meetings? NO ONE understands healthcare design problems and deficiencies better than a patient or family member who has had to endure a lengthy stay in a hospital room, yet until recently, the idea of including these individuals in the project planning process was largely unheard of or minimized to a couple of early meetings. Similarly, in a GMP manufacturing facility, the end-users of a new space as well as the people working in the space should participate in the OPR process. This group should include maintenance staff, plant operators, technicians working directly in the manufacturing processes, and cleaning staff, among others.

Have Environmental Services workers and Food Services workers been asked what their greatest challenges are? What makes doing their jobs difficult? What works well? What doesn't

work well? What would they most like to see in a brand-new inpatient unit, kitchen, or student dorm? Only after these questions are answered can a design team fully achieve the goals and vision of their client.

Similarly, the cleaning requirements in a GMP facility are generally considered equal to or greater than the requirements in a surgical suite. While any experienced GMP or cGMP operator might be aware that edges and corners are capture points for particles and the goal is to minimize those areas, has the design team observed the cleaning team complete their jobs? Is there a way to eliminate angles and corners in a cleanroom? While the answer may seem obvious to people working in GMP facilities every day, it is rare that a designer has spent any amount of time in the types of spaces they're designing, let alone asking the cleaners what their biggest challenges are. In this case, the answer is simple. Designing corners with cleanroom coving and eliminating seams between surfaces can reduce the risk of contaminant accumulation considerably and is a simple design feature to include.

The ultimate goal for any project should be to ensure customer expectations are met at the very least, and exceeded whenever possible. Including a representative group of those end-users in the planning and design process, beginning with the OPR, can ensure success. Taking this philosophy a step further and including them in critical planning meetings with key members of the project team speaks volumes about an organization's commitment to the very people they serve. They in turn will feel a sense of ownership and pride, and often become one of the best forms of marketing any organization can hope for.

ESTABLISHING REALISTIC EXPECTATIONS

It's nearly impossible to fulfill the requests and demands of everyone involved, and that's okay. Some requests are unrealistic or beyond the defined scope, while other requests may lack logic altogether. With that said, simply including all affected parties in the OPR process allows all stakeholders to share their ideas and feel heard—this is a win by itself. It also presents the appropriate leader with an opportunity to either respond in the moment or follow up at a later time. Following through and communicating with participants drives engagement in a meaningful way. Even when a strategic capital project takes years to complete, those participants will feel a sense of pride and ownership in the finished product, if the appropriate leader communicates in an effective and transparent way.

It is imperative that senior-level leaders involved in the process take the opportunity to explain that not all requests will be incorporated into the design and construction, however it's important to explain why. At some point during the OPR process, it must be determined whether the project concept and goals can be achieved within the established constraints: budget, timeline/schedule, can end-user requirements be met? Transparency during this process is vital.

Frequently, project designers have their own vision for what the completed project should look like – some wish to leave their personal touch, leading customers down a path that may not be practical or preferred. Many hope their design will be recognized or win awards. It's important for the client/owner to be explicitly clear about their expectations. Remember, the architect works for the owner.

Example:

During project planning for a nearly \$200M project a few years ago, a hospital facilities director expressed the desire to minimize the number of different light fixtures included in the design. When building new or renovated facilities, many hospital facilities teams limit the different types of light fixtures in their facility to a manageable number.

This particular team requested that the design team minimize the different types of light fixtures included in the design. It was a practical request based upon decades of experience. Stocking light fixtures and their corresponding lamps for maintenance purposes requires a lot of space and significantly drives up storage and operating costs, while standardization significantly reduces operating costs.

During review of the initial design, the team noticed the plans included between 25-30 different light fixtures; a direct contradiction to their request which was explicitly stated in the OPR document. While the architect was not happy about the denial of this design component, it was an easy conversation to have, as it required a simple reminder about who worked for whom, and the expectations stated explicitly in the OPR document. In this case, both teams ended up compromising by agreeing to cut the different types of fixtures in half allowing plenty of design appeal while also improving standardization and overall operating costs.

The OPR process establishes the foundation for a 'win-win' situation for all involved parties. The customers, affected staff, organizational leaders, and the design team are all given the opportunity to share their opinions and ask questions, however upon final document completion, everyone should have a clear understanding of expectations. Once the OPR document is completed, it should not be changed due to the personal preferences or opinions of any one individual or group. It's time to move onto the Design Development phase.

COMPREHENSIVE DESIGN

Another common discussion during the OPR process is related to operational efficiencies. These concepts are usually straightforward, common-sense ideas which are frequently overlooked by designers lacking operational experience in the industry or environment they're designing for.

For example, typical hospital inpatient units might contain a single Environmental Services closet, or if they're lucky, perhaps two. When an architect designs an inpatient unit, their primary goal is to create a sensible patient room layout offering efficient traffic flow for nurses. Support spaces, while certainly not an afterthought, tend to be squeezed in wherever they fit, or eliminated to accommodate additional clinical demands. Environmental Services staff need quick and easy access to their closet, which generally contains a mop sink, a cleaning solution dispensing station, and other supplies. They also need easy access to a trash closet. These types of spaces are an integral part of the design.

Hospital teams will struggle providing appropriate care to patients and achieving positive patient outcomes without these efficiencies. Poor patient outcomes will lead to low patient satisfaction scores, which negatively impacts Medicare reimbursement rates. If an Environmental Services worker has an opportunity during the OPR process to say "the EVS closets in our current inpatient units are too small" or "it takes too long to deliver trash to a trash closet, which makes me fall behind in turning patient rooms over", their leader can either support or oppose those claims. When room turnover is delayed, patient admissions are delayed, which frequently causes overflows and back-ups in observation units and emergency departments. Once a decision is made to include something in the OPR document, the design should reflect those expectations.

Similarly, a Facilities Management team is required to perform both corrective (when something breaks or fails) and preventative maintenance on equipment and systems. Many HVAC systems were traditionally designed with individual components, such as Variable Air Volume (VAV) boxes, which are accessible only from within hospital inpatient rooms. During the OPR process, an HVAC technician might ask, "Is there any way the VAV boxes can be located **outside** the patient rooms so we do not have to disturb a patient when maintenance is required? Also, could you make sure the VAVs can be easily accessed so the maintenance technicians don't have to contort themselves around pipes and over ductwork to access the equipment which most commonly requires maintenance?"

The answer to these questions is simple and should always be included in an OPR document. In this type of situation, the design engineer should ensure that all VAV boxes are located outside the patient rooms and are also easily accessible. Years down the road, the maintenance technician who made the initial request, along with his or her peers, will remember that they were invited to participate, and that their voices were heard during the planning phase of the project, because each time one of them has to repair or replace a VAV box, they'll be able to do so without disturbing a patient and without putting themselves at risk due to a hard-to-reach VAV box.

The key takeaway is that only when the entire team is consulted and given a voice through the OPR process, will the designer avoid missing subtle, yet critical details in the design. As Steve Jobs said, ***"It doesn't make sense to hire smart people and then tell them what to do; we hire smart people so they can tell us what to do."*** This quote applies to the OPR process.

STRATEGIC CAPITAL

Most institutions allocate a certain amount of their budget to capital projects and investments based upon the previous year's, or several years', financial success. Every so often, a truly meaningful, organization-changing project comes along. These projects almost always require approval from state and local authorities at a minimum, as well as governing boards. They almost always make headlines long before ground is ever broken. Nearly everyone both internal and external to the organization will have an opinion. Occasionally, public funding makes up a portion of the budget. The budget for projects of this scale is often referred to as strategic capital.

Oftentimes, a community, city, and/or state may have a vested interest in the successful execution of a project of this scale. A corporation may receive incentive-based tax credits committed by a local governing body when certain commitments are realized. For example, communities occasionally donate land to attract new companies to an area, thus creating jobs and boosting the local economy. That same city might offer a percentage of property tax abatement, in turn reducing the annual costs of ownership for the new occupant.

Similarly, economic development committees might contribute funding in the form of conditional training grants. A local community may commit to support infrastructure improvements if an agreed-upon number of new jobs are created. These types of incentives are almost always performance-based, meaning the company is only eligible to claim them once specific investments are made or milestones are achieved.

Since the scopes of strategic capital projects are so extensive, it is especially crucial to complete the OPR process either prior to or early in the design development phase. While certainly situational, one strategy may even be to include opponents of these projects in the OPR process, although it is recommended to engage opponents well in advance of making that decision. While not a sure thing, it is not altogether uncommon for folks who begin as opponents to eventually adjust their opinions and align with the project owner. Engaging such opponents may pay dividends in the long run, by minimizing the opposition throughout construction and after occupancy.

FINANCIAL IMPACT

In today's tumultuous world, employee engagement and retention should be a top priority for every organization. Including end-users in the OPR process goes a long way to engaging members of the team, regardless of their position within the organization. For large organizations, improving engagement and reducing turnover can save millions of dollars each year. Just before COVID-19 impacted the world, one New England health system stated that each new hire cost the organization tens of thousands of dollars. Not \$10,000, but exponentially more.

The Advisory Board, a well-respected healthcare consulting group, reported that health system employee turnover rose to 18.8% in 2021. Becker's Hospital Review published that the average cost of turnover for an RN was \$52,350 in 2022. Since healthcare tends to be among the largest industry employers in nearly all regions, consider the financial implications of this figure. Think about it this way: If an organization with 20,000 employees turns over 18.8% of their employees in a given year, that equates to 3,760 lost employees. If each of those employees is replaced and the organization is fortunate enough to (conservatively) spend only \$15k on each new hire, it would cost the employer more than \$56 million. The actual cost is far greater due to the conservative numbers used in this example. How many organizations do you know that can afford to lose \$56 million in a year?

We've all heard the expression, "People don't quit jobs, they quit bosses." That same employer who loses 3,760 employees and spends \$56 million to replace them could invest a small fraction of that money in leadership development, employee training and development, and employee engagement. Think about how many executive coaches, even consultants providing those services, that employer could hire for a mere 5-10% of that amount. \$5 million goes a long way towards developing and implementing programs which lead to improved engagement, minimizing turnover, and impacting the bottom line in a meaningful and tangible way. You may find yourself asking what this has to do with the OPR process.

Think about it this way: Including a broad and diverse group of employees in the OPR process - representation from all impacted departments - can improve employee engagement for those employees. Their positive experiences often create a domino effect, influencing their peers and colleagues, which in turn reduces turnover and therefore costs. Engage the entire team. Let them participate in the project planning process. Listen to their stories, opinions, and experiences. Learn from them and respond by eliminating some of their headaches. They will thank you for it. They will be loyal and proud. They will be committed to excellence. This type of engagement pays dividends over time. As with engaged customers, engaged and loyal employees are one of the best forms of advertising any organization can hope for.

Consider the impact of not completing an OPR during project planning. A project will almost certainly experience problems which are largely avoidable if addressed during planning; challenges which might have been avoided had a simple discussion addressing potential issues been had. Technology and workflows are constantly evolving. In a traditional research lab, work surfaces and equipment are usually fixed in place, meaning they cannot be moved without creating greater impact to the surrounding environment.

However, the OPR process would help establish that end-users of a planned lab are unable to adjust their work processes to become more efficient if lab tables and equipment are fixed in place. Believe it or not, while seemingly obvious, the concept of designing moveable work surfaces and equipment in a lab environment is a relatively new one. Over time, these types of inefficiencies only compound, leading to a loss in productivity, delayed outcomes, and might ultimately lead to missed funding or development opportunities. In the long run, this missed

opportunity will require renovations to correct a problem that should have been avoided to begin with. In turn, it will cause the lab to be shutdown to correct the issues, leading to additional loss of productivity, and so on.

OPERATIONAL READINESS

Creating a safe, efficient, and successful operation is the end-goal for every project. If a new facility or space is completed, but no planning goes into transitioning an existing team into their new space, operational effectiveness will be substantially diminished, thus impacting revenue and everything connected to financial viability. Therefore, Operational Readiness should be a priority in every project. Unfortunately, most project managers employed by the owner/client, as well as contractors and even consultants, fail to prioritize this important part of the project. Discussions around Operational Readiness should begin during the OPR process. This is when a draft outline related to operational requirements through final occupancy should begin to take shape. Operational Readiness planning should include, but not be limited to:

- Defining roles and recruiting the right people
- Documentation and Communication
- Data management and control
- Systems startup
- Testing and Commissioning
- Punchlist and Project Closeout
- Furniture, Fixtures, & Equipment / Move Management
- Training and Orientation
- Capital and Operating Budget
- Quality Assurance (QA)
- Asset and Equipment Management
- Maintenance and service contracts
- Safety and Environmental Standards
- Emergency Preparedness

CONCLUSION

The Owner Project Requirements (OPR) exercise is one of the most important tools available to align all stakeholders on construction needs and requirements. It ensures quality delivery while minimizing costly changes later in the process, but unfortunately tends to be the first service eliminated from a project scope during the Value Engineering process. Doing so is a mistake. Investing in the OPR process during the project planning phase may cost a bit more up front, however it will almost always prevent mistakes, tension, damage to team engagement, missed opportunities, and some level of dissatisfaction among all involved parties. Without OPR, there is risk of never achieving the “one team” dynamic so critical to construction projects today. OPR will also reduce or prevent compounding expenses in rework, changes, and/or retrofits which end up being exponentially higher than the cost of including OPR in scope to begin with. Invest in this process up front in order to avoid unnecessary headaches and higher costs throughout the project.

Pintail Solutions

Pintail Solutions is a niche life science services company focused on delivering complex projects to improve global health. Our passion is to provide thought leadership and execution expertise for mission-based organizations. Across our client base, we move business forward; move academia forward; move nonprofits forward within the life science ecosystem.

About Wes Pooler

Wes Pooler is Pintail Solutions’ Vice President of Facilities Services and offers more than 20 years of experience serving in leadership roles for both for-profit and not-for-profit organizations alike. With nearly 15 years as a healthcare executive, Wes has overseen projects in excess of \$150 million, and served as the Operations Section Chief of a hospital incident command system through the first two years of the COVID-19 pandemic.

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