THE STATE OF THE AEC PROJECT LIFECYCLE

A BST GLOBAL REPORT

TABLE OF CONTENTS

AN INTRODUCTION TO THE PROJECT LIFECYCLE

Across the architecture and engineering industry, one constant sits at the heart of every firm: projects. It is the focal point around which every AEC practice centers itself. Projects are how you assign, create, manage, and ultimately deliver work. Because projects play such a pivotal role in this industry, BST Global decided to take a deep dive into the current state of the project lifecycle for AEC.

In a first-of-its-kind exercise, we surveyed a diverse group of executives from leading international architecture and engineering

consultancies on their current project and resource management practices. By examining the five elements of the project lifecycle (outlined below), we uncovered the participating firms' current performance, top priorities, and key opportunities for improvement.

From those interviews, we've gleaned their most popular responses and summarized them for you here. Now, you too can begin to assess your firm's project and resource management processes to identify new areas of focus and opportunities for creating a competitive advantage within your firm.

THE PROJECT LIFECYCLE

1. PROJECT BIDDING
2. PROJECT PLANNING
3. PROJECT EXECUTION
4. RESOURCE MANAGEMENT
5. PORTFOLIO MANAGEMENT

A BIRD'S EYE VIEW

When it comes to participants' project and resource management practices, inefficiency and poor visibility are the most common symptoms plaguing their processes. The underlying cause? The tools they're using.

For the majority of respondents, nearly everything in the project lifecycle – from bids to projects to resources – is being managed in spreadsheets. And for firms that actually have enterprise resource planning (ERP) solutions, only the finance department is leveraging the tool – the majority of Project Managers and department heads are still relying on complex, offline spreadsheets to manage their portfolios.

For these firms, the use of such spreadsheets leads to a number of issues in the project lifecycle, including:

- Poor resource utilization
- Impaired project performance
- No visibility beyond spreadsheets
- Lack of insight into earlier work
- Limited collaboration and access
- Poor scope and risk management

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These pain points are further underscored by respondents' ranking of their project and resourcing goals. When asked to rate a set of 15 goals related to project and resource management, participants listed the following as their top priorities:

1. Reduce revenue leakage
2. Increase client satisfaction
3. Increase resource utilization
4. Utilize standard delivery methodologies and best practices
5. Reduce service delivery costs
6. Reduce the number of systems used in service delivery

With respect to the highest priority goal – reducing revenue leakage – respondents on average hope to cut this metric in half – from the current average of 6% down to 3%. Improving resource utilization came in as the third highest priority for respondents, with the average looking to increase employee billable utilization by 8 points, going from two-thirds of staff time being billable up to three-fourths staff time.

The final three goals rounding out the top six are all about project delivery. Here too, respondents feel there is room for improvement: they hope to increase projects delivered on time and on budget from 74% and 64%, to 90% and 84%, respectively. Finally, participants sought a marginal increase in project profit margin, from the current 37% up to 39%.

AEC EXECUTIVES ARE LOOKING TO CUT REVENUE LEAKAGE IN HALF - FROM AN AVERAGE OF 6% TO 3%.

AEC EXECUTIVE GOALS

Legend:
- CURRENT AVERAGE
- GOAL AVERAGE

REVENUE LEAKAGE — 6% / 3% — **-3%**

EMPLOYEE BILLABLE UTILIZATION — 67% / 75% — **+8%**

PROJECTS DELIVERED ON TIME — 74% / 90% — **+16%**

PROJECTS DELIVERED ON BUDGET — 64% / 84% — **+20%**

PROJECT PROFIT MARGIN — 37% / 39% — **+2%**
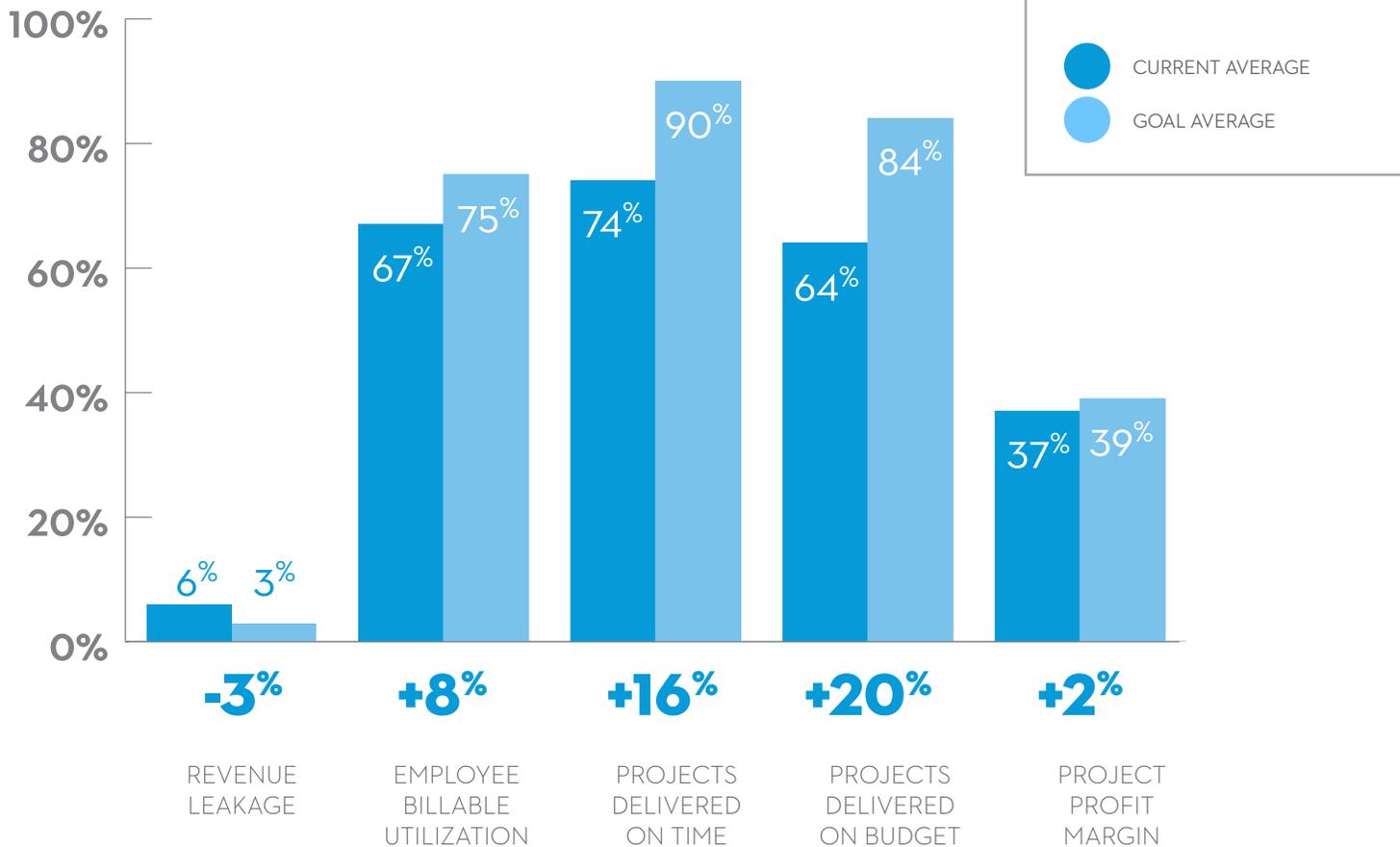
Based on these goals, we can see there are clear opportunities for improvement in terms of AEC firms' project and resource management practices. And while these goals give us a surface-level view of the current state of the project lifecycle in AEC consultancies, a closer look at the five different elements of this cycle – project bidding, project planning, project execution, resource management, and portfolio management – provide a much clearer picture of today's project and resource management landscape for consultancies. Let's explore each.

PROJECT BIDDING

Let's begin where all projects begin: in the bidding phase. As mentioned previously, spreadsheets — specifically Microsoft Excel — are the most widely used estimating tool amongst respondents. However, while spreadsheets are used by all, the format and complexity vary from participant to participant.

1. PROJECT BIDDING

BUILDING BIDS

Generally, bids are built using generic roles, such as Senior Engineer or Project Architect. However, firms occasionally include specific, named resources in their bids – particularly with existing clients, localized teams, or unique skill requirements.

The bid creation process is typically managed by one of three roles: either the Business Unit Manager responsible for that area of the business, the eventual Project Manager of the awarded project, or a dedicated Bid Manager. And while all firms have a primary party responsible,

85% of respondents require collaboration from multiple parties on bids. In particular, bids for larger, more complex projects often need multiple levels of review and approval.

Primary Party Responsible for Bids

30%:
BID MANAGER

30%:
PROJECT MANAGER

40%
BUSINESS UNIT MANAGER

FINALIZING BIDS

When estimating project fees, all respondents report using multiple methods – with 100% creating estimates using the Bottom Up method. From there, some participants leverage additional estimation methods, including Top Down and Timeline, to further refine their bids.

Once fee estimation is complete, the bid is typically delivered in a client-defined format. While the internal spreadsheets participants use for estimating generally contain high complexity, the final bids delivered to the clients possess much less detail than the estimation tool.

Fee Estimation Method Used for Bids

100%

100% BOTTOM UP

60%

60% TOP DOWN

20%

20% TIMELINE

PROJECT PLANNING

Once a project is won, we move into the planning phase of the project lifecycle. Here we see the bid truly come to life, with specific timelines and resources detailed out. There are multiple players throughout this phase, from those who create the team to those who are actually on it.

2. PROJECT PLANNING

1. PROJECT BIDDING

3. PROJECT EXECUTION

To begin a project plan, all respondents start with their original bid: 100% report reusing bid data. But this is no easy feat for many of the firms, as 70% report having to re-enter their bid data, including the WBS, resources, estimated fees, and other data, into their project management tool, due to a lack of integration with their estimating tool.

100%

FIRMS REUSING BID DATA IN PROJECT PLAN

70%

FIRMS RE-ENTERING BID DATA IN PROJECT PLAN

To complete the project plan with resources, respondents note that their Project Managers typically collaborate with Business Unit Leads, Resource Managers, or both. However, **only 25% of Project Managers can add specific, named resources to their projects.** For the majority of firms (75%), that responsibility lies solely with the Resource Manager.

These detailed project plans are typically for internal use only, and generally not shared with the client. Once the plan is complete, team members usually learn about their project assignments through a kickoff discussion with the Project Manager or communication from their Resource Manager.

PROJECT EXECUTION

Now that the project plan is complete, the "real work" begins. Deliverables are at the center of the project execution phase – with quality and timeliness being the key areas of focus. At this point, we believe it would be useful to revisit some of those delivery-related goals listed previously by our respondents. Within the project execution phase, participants hope to:

- Utilize standard delivery methodologies and best practices,
- Reduce service delivery costs, and
- Reduce the number of systems used in service delivery

3. PROJECT EXECUTION

2. PROJECT PLANNING

4. RESOURCE MANAGEMENT

PROJECT EXECUTION TOOLS

The types of systems participants use in service delivery typically fall into one of three categories: project management tools, collaboration tools, or document storage tools. Example solutions leveraged include:

Project Management Tools
- Microsoft Excel
- Microsoft Project
- Primavera

Collaboration Tools
- Microsoft Outlook
- Skype for Business
- Corporate Intranet

Document Storage Tools
- Microsoft SharePoint
- Network Folders
- Dropbox

No matter which specific tools are being used, in almost all cases, both the collaboration and document storage solutions are disconnected from the project management system. This makes the gathering of project status updates by the Project Manager particularly difficult, with approximately **90% of respondents reporting that they must manually gather status updates from team members.**

CHANGES TO THE PROJECT

If a project requires a change order, the majority of respondents undergo a process similar to that of their initial project bidding process – involving an estimation, review, and approval. Any changes to the actual project team typically require collaboration with the Business Unit Lead and/or the Resource Manager.

Should a team member's assignment change, the overwhelming majority of them (90%) will learn of their new tasks verbally.

COLLABORATION

DOCUMENTS
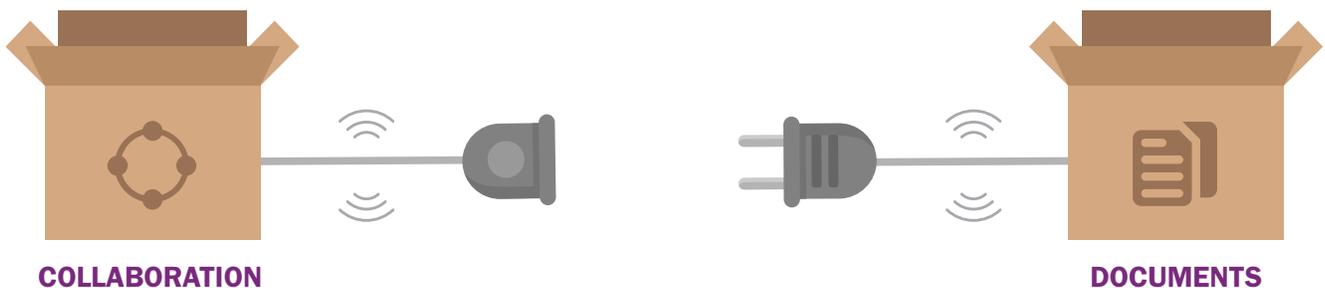
RESOURCE MANAGEMENT

Improving resource utilization ranked as the third highest priority amongst our participants. However, the way in which firms leverage their teams can have a significant impact on the top two priorities listed: reducing revenue leakage and increasing client satisfaction.

4. RESOURCE MANAGEMENT

3. PROJECT EXECUTION

5. PORTFOLIO MANAGEMENT

With regard to revenue, properly resourcing your projects for the appropriate time and fee levels can prevent firms from completing work they are unable to bill for. Beyond that, a client's satisfaction can be highly impacted by the members of your team they are interacting with, as well as the quality of the deliverables being produced by said team.

When it comes to team members, Resource Managers are the gatekeepers for participating firms. These Resource Managers are often engaging in extensive discussions with multiple Project Managers, in order to match generic project skill

demands to specific team members. This can prove to be a difficult task, as less than 25% of respondents say their Resource Managers have access to real-time resource allocation and utilization data when scheduling team members.

The size of resource pools vary, with 80% having at least 11 members, and 45% having 21+ members. As resource team sizes expand, collaboration becomes ever more critical. However, **less than 15% of respondents leverage online collaboration tools.**

LESS THAN 25% OF RESOURCE MANAGERS HAVE ACCESS TO REAL-TIME UTILIZATION DATA WHEN SCHEDULING TEAM MEMBERS.

PORTFOLIO MANAGEMENT

Finally, we reach portfolio management – the culmination of all proposed and in-progress projects within a particular firm. For most of our respondents, portfolio management is not currently a widely adopted practice, however it is an increasing area of interest.

5. PORTFOLIO MANAGEMENT

4. RESOURCE MANAGEMENT

1. PROJECT BIDDING

Portfolios are typically managed by region, market segment, or client, with the final being the most popular way to organize portfolios at 40%. However, the way in which firms perform portfolio management is inconsistent throughout their practice.

Of the firms who do practice portfolio management, only half of them report having a standard set of processes and tools used consistently across their portfolios. The remaining performed this on an ad hoc, departmental basis.

What's more, portfolio management practices – such as reviewing a group of projects together to optimize resource usage (versus reviewing projects one-by-one) to optimize resource usage – appear to primarily focus on project financials for AEC firms. **Less than 10% of respondents reported leveraging portfolio-based resourcing practices.**

40% OF PORTFOLIOS ARE ANALYZED BY CLIENT.

CONCLUSION

While much progress has been made in terms of project and resource management in the AEC industry, our participants' responses show that there is still room for growth. So, what's at stake for you firm if you do gain better control over your project lifecycle? Let's take a look back at those original top priority goals of respondents, and reframe them in terms of potential benefits for your firm:

1. Reduced revenue leakage
2. Increased client satisfaction
3. Increased resource utilization
4. Reduced errors through standardized delivery methodologies and best practices
5. Reduced service delivery costs
6. Reduced number of systems used in service delivery

Now – who wouldn't want that?

LEARN MORE

At BST Global, we're here to help. If you would like to learn more about how BST Global's robust enterprise resource planning solution, BST10, can power your firm's project and resource management discipline, drop us a note at hello@bstglobal.com or visit bstglobal.com.

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