Tech Executive Leadership Initiative

POLICY

Proposed Revisions to Project Approval Lifecycle for Technology Projects

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EXECUTIVE SUMMARY

This short policy brief proposes changes to California's Project Approval Lifecycle (PAL) process to improve results and reduce planning overhead. More specifically, the Project Approval Lifecycle should be revised to incorporate (1) low-overhead "discovery" and "prototype" phases, (2) a smaller process for smaller projects, and (3) caps on the overall size of all projects. This brief reviews the issues with the existing PAL process and the solutions proposed. Throughout, we link to documents we have created that illustrate how the proposed solutions might be implemented.

BACKGROUND ON THE PAL PROCESS

All large technology projects (for example, modernizing drivers' licenses) in the State of California go through the PAL process. This four-part process is designed to align stakeholders around the design and scope of a project. The PAL process enables the State to provide oversight and accountability for complex projects. However, the current PAL process treats all projects the same, and requires that project owners outlay a large amount of time upfront, before any development or paid discovery commences. This results in the following issues:

- Deploying PAL can reduce time-to-delivery;
- Because PAL is time consuming, there is a bias towards large, overscoped projects;
- Solution feasibility is not proven until after approval; and
- In the face of changing circumstances, it can make it hard to adjust course.

Particularly during the COVID-19 pandemic, it has become clear that

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the state needs the ability to have shorter and more agile planning, discovery, and approval cycles.

RECOMMENDATIONS

Through extensive research with stakeholders from the California Department of Technology, this memo proposes a few key recommendations to improve the PAL process:

- **Introduction of low-cost, low-duration "discovery" and "prototype" phases as complementary to the full PAL lifecycle:** Nearly all projects stand to benefit from some degree of field research that can inform long-term risks and viability. Implementing these early phases would provide a structured way to analyze risk up front, producing better long-term plans.
- **Introduction of a low-cost, low-duration "PAL Lite" variant of the PAL process that can be applied to small projects with bounded complexity and risk:** Small projects consume a fraction of overall dollars, but generate a large amount of administrative overhead through the full PAL process. A PAL Lite option would facilitate getting these projects through the process, allowing for more value to be delivered to clients and public customers.
- **Caps on the overall size of all PAL projects, to promote accountability and process rigor:** Past a certain size, projects stop being adaptable and can become paralyzed by their own size. We recommend monetary and timeline caps to force projects to sub-divide complex goals into more granular milestones.

We have provided here a Next Generation PAL Stage Chart that clarifies the changes we are proposing. We also identify below specific documents that can help with implementing each of our proposed changes.

AMENDING STAGE 1: DISCOVERY AND PROTOTYPING PHASES

We recommend first splitting the first stage of its Project Approval Lifecycle (PAL) into two phases: Phase 1a, Discovery & Planning, and a new Phase 1b, Proof of Concept. This would allow CDT to determine project risk early by reviewing solutions before they are fully developed, while causing process clients to evaluate their solution's feasibility on a small scale.

Benefits of adding these phases include:

- **Money saved:** The discovery and prototyping phases will help weed out dead ends before they turn into full-fledged projects. Even for projects that otherwise would have not passed the standard PAL process, eliminating such projects at an earlier stage of the process will save personnel time. Moreover, rather than approving a $50M project up-front, an agency would be able to first build confidence that the project will be viable (or not).
- **Earlier & more incremental checkpoints:** The prototype phase would allow ideas to be proven out before they are up for longer-term approval. This would enable stakeholders to make better decisions based on better information about risks, cost, etc. Moreover, even when projects go through the prototype or discovery phase, the majority of dollars will still be under the full PAL process.
- **Shared knowledge:** New projects would benefit from an ever-growing repository of lessons learned from previous discovery and prototype phases. Rather than start from scratch with a large new project, agencies can quickly reference documentation from previous efforts.
- **Faster delivery:** By building out small-scale versions of solutions, teams can focus development time on how to scale their deployments rather than validating the basic frameworks.

For details on how to operationalize the split, please see:

- PAL Stage 1a Template (a summary of changes to existing Stage 1)
- PAL Stage 1a Discovery and Planning Template (a full template for Stage 1a planning)
- PAL Stage 1a Scorecard (a new scorecard for Stage 1a)
- PAL Stage 1b Guide (an overview of Stage 1b: Proof-of-Concept)

CREATION OF A PAL LITE STAGE

We also propose the State split its work into a "PAL Lite" for small projects and “PAL Regular” for larger projects. Under the PAL Lite model, smaller projects would undergo fewer interventions and checks, allowing them to be completed quickly with a proportionate amount of oversight. Under the PAL Regular model, larger projects would be subject to more checks, allowing the state to guarantee these higher-stakes projects are completed correctly while accelerating value delivery on low-risk projects.

Benefits of adding a PAL Lite process include:

- **Faster time to delivery:** Delivery-centric goals would enable projects to optimize for value delivered for users, not for the amount of work done. Having more frequent, delivery-oriented milestones will mean that the State can benefit from delivered products even if a project is paused midway through. Rather than waiting for five years to see whether a project would deliver value, the State would experience 20% of value over each of the five years it was being produced.

- **Incentivising agile approaches:** By offering a lighter weight process, the State can drive teams towards smaller, more incremental deliveries. This will cause project clients to be more flexible, while creating functionality for end users incrementally.

- **Keeping essential controls:** A modified process does not give up oversight control. If anything, it creates better oversight visibility through more incremental checkpoints.

For details on how to operationalize this phase, please see:

- PAL Selection Criteria (an operational flow chart with size thresholds)

- PAL Process Selection (a form to collect project data for sizing)

SIZE CAPS

Finally, we propose creating a cost and time ceiling for large projects. California IT projects with budgets over $15M typically blow past their allowances. By limiting cost and time, the CDT can reign in inefficient projects, introduce accountability, and reallocate resources to smaller, less-resourced initiatives.

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Benefits of adding size caps include:

- **Mitigating uncertainty:** Outside factors (e.g., a pandemic) may change the priority of a project far beyond the State's control. With project size caps, it will be easier to pause a project in light of changing circumstances.
- **Incremental planning:** Project caps encourage incremental planning, and successive delivery of real functionality.

For details on how to operationalize this, please see:

- PAL Process Selection Criteria (an operational flowchart with size thresholds)
- PAL Process Selection (a form to collect project data for sizing)

CONCLUSION

These recommended changes to the PAL process would allow for the **same level of oversight over the majority of large-scale tech projects,** while **increasing adaptability and faster completion times across all projects**. We urge the State to consider our proposed approach as you seek improvements to the overall PAL process.

ABOUT TELI

This project was completed as part of the Tech Executive Leadership Initiative (TELI), a 10-week skills-building initiative that prepares experienced technology leaders to engage effectively with public sector challenges. Learn more at aspentechpolicyhub.com/teli.

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Background on Agile Processes

Many of the changes that we are proposing come from a process discipline known as "agile". While the term "agile" can mean different things to different people, here are the concrete concepts that we are incorporating:

- *Discovery* (see public sector examples from Australia and the UK):
    - Discovery is an early phase of project development where key questions like "what are the most important problems?" can be addressed. For example, if there is a project revising access to public benefits, a discovery phase could conduct research and interviews with current users about what works with the current system, and what they would improve.
    - Discovery helps ground projects in the users and constituents that they serve, by better understanding core challenges upfront. It is much easier to learn challenges early on in a project and incorporate them into later design phases, than to change designs later in reaction to surprise experiences by users.
- *Prototyping* (see public sector examples from MITRE and Federal 18F Division):
    - Prototyping is a practice in which an early sample or model of a system, capability, or process is built to answer specific questions about, give insight into, or reduce uncertainty or risk in many diverse areas. For technology projects, this can mean taking a proposed project (like an app) and testing an early version with a handful of users.
    - Prototyping helps prove that the concepts in a proposal are sound. For example, a project might be intended to reduce the number of steps or time it takes for a public user to pull a permit, but in testing developers discover that it actually increases internal friction for users. This discovery would have huge consequences for the project. Timelines might have to be revised or entirely rethought.
    - Prototyping reduces risks. Prototyping can inform how constituents and users will actually engage with technology, increasing confidence in project timelines and decreasing the potential for more expensive scope changes after vendor selection.

- Prototyping also can help validate a design hypothesis. Technology can be difficult to interact with. Prototyping can help government agencies identify ways to package technology and interfaces in a way that makes it easier for the average person to use.

- "Prototypes" are critical parts of a "Proof(s) of Concept" (POC). POCs usually include one or more Prototypes, and are designed to evaluate how a Prototype is applied as a solution to a business problem. This may include users simply operating the prototype, or a more complex evaluation where the prototype is placed within a framework of processes and existing systems.

Agile is often contrasted with the traditional "waterfall" approach to planning, which attempts to establish most of the project design before implementation begins.

Dangers of waterfall (see also the General Services Administration and Deloitte for examples):

- A key problem with the waterfall approach is that it can produce late-stage surprises. Oftentimes, bad assumptions are not discovered until the end of the process. This can lead to delays and cost overruns, as major parts of the system need to be re-thought and re-built.

- Waterfall software development also encourages large, multi-year projects, which can fail for a variety of reasons. The longer a project runs, the more likely that the original staff leaves, decreasing accountability for the outcome. The sub-projects for a larger project may also introduce surprises that delay subsequent pieces. Finally, a waterfall approach also makes it more difficult to adapt to changing social circumstances (e.g., the emergence of widespread Internet access in the early 2000s; the prevalence of social media in the 2010s; COVID-19 in 2020).